LabelWriter SE300
User Manual

Dymo-CoStar Corp.
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Declaration of Conformity

Manufacturer

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Equipment Information

Description: Direct Thermal Printer

Model: SE300

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC (Federal Communications Committee) rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correcting the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Use shielded cables to connect this device to computers.
- Consult the dealer or an experienced radio/TV technician for help.

You may find helpful the following booklet, prepared by the FCC: Interference Handbook. This booklet is available from the U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402-9325.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CE

CE Certification

This device has been tested and complies with the requirements of:
The EMC Directive
EN55022: Radiated and Conducted Emissions B
EN50082-1: Generic Immunity ESD, RF, and Transient Susceptibility
and
Low Voltage Directive
Product Safety EN60950

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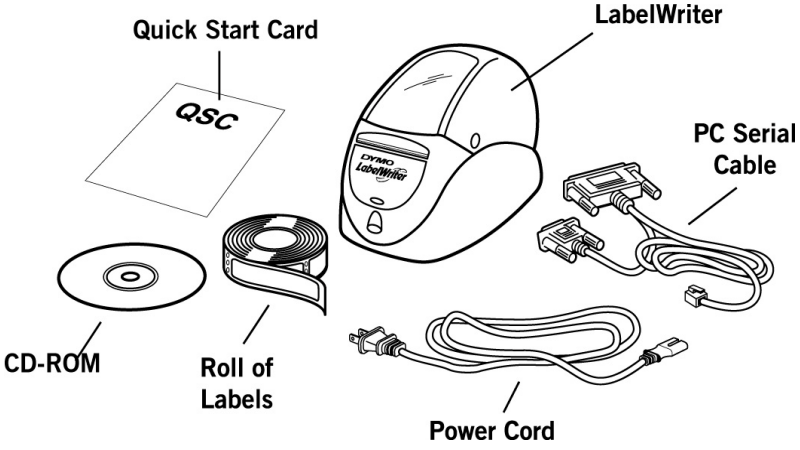
Chapter 1

Installing Hardware

This chapter explains how to set up your new LabelWriter hardware for optimum performance. Read this chapter carefully before attempting to set up your LabelWriter for the first time. It is the best way to ensure a long and trouble-free life for your printer

Unpacking the Printer

The first step in setting up your printer is unpacking the pieces. You should find the following items (shown in Figure 1-1):



.Figure 1-1

Check to see if anything is missing or damaged. If there is a problem, contact Dymo-CoStar immediately. Be sure to save all the original packing materials. They are especially designed to protect the printer and will make re-packing easy if you ever need to ship the printer.

Also note that your LabelWriter does not use toner or ink cartridges, or a ribbon to print. The LabelWriter is a direct thermal printer. Direct thermal printers transfer heat from a

thermal print head to specially treated labels to print. The only supplies you will ever need to replace with this printer are labels.

Connecting the Power

You connect the power cord to the rear of the printer as shown in Figure 1-2. Plug the other end to a power outlet. The LabelWriter printer has an internal power supply that can accept any voltage between 100 and 250 volts (50/60Hz). As a result, the printer can be used worldwide.

Connecting the Serial Cable

Your printer and computer communicate through the special serial cable that comes with your LabelWriter. (A parallel cable option is also available. Call Dymo-CoStar for details.) The serial cable has a telephone-like connector at one end that plugs into the back of the LabelWriter, and two serial connectors at the other end – a 9-pin connector and a 25-pin connector. Your PC will use one or the other of these two connectors, not both.

Follow the steps below while referring to Figure 1-2 to make the proper connections:

1. Turn off your computer and printer.

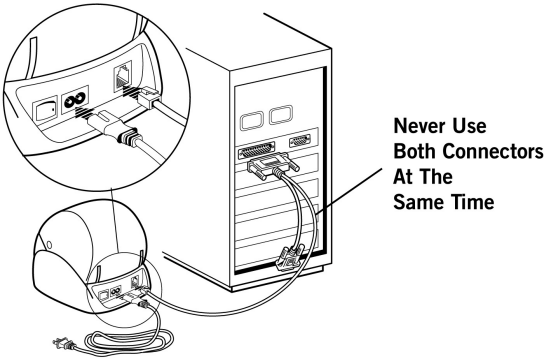


Figure 1-2.

2. Connect the printer end of the serial cable to the port in the rear of the printer. It fits only one way, just like a telephone.

3. If you have a 9-pin serial port on your computer, attach the 9-pin connector; if you have a 25-pin serial port, attach the 25-pin connector. Secure the connector with the two screws. The connector you do not use can simply hang loose. See Figure 1-2.

Loading Labels

Follow the instructions below to load labels into the LabelWriter printer.

1. Open the cover so that you have access to the interior of the printer. Remove any packing material and press the form feed button to eject the test label that protected the print head while in transit..
2. Remove the label spool by lifting it straight up from the spool holder.
3. **The spool has two distinct parts. The part with the center shaft must always be installed on the left side of the printer when viewed from the front.**
4. Remove the right side of the spool by sliding it off the center shaft.
5. Locate a roll of labels and remove the tape from the end of the roll. Cut the lead label in half to create a nice straight edge. The LabelWriter printer grabs a straight edge much easier than a rough edge.
6. Refer to Figure 1-3 while following these instructions: Slide your roll of labels over the spool from right to left as shown in Figure 1-3a. (The labels should roll out from the bottom of the spool.) Then, re-attach the right side of the spool and push it firmly against the label roll. If you're using address labels or other narrow labels, your spool will look like Figure 1-3b. If you're using shipping or other wide labels, your spool will look like Figure 1-3c.

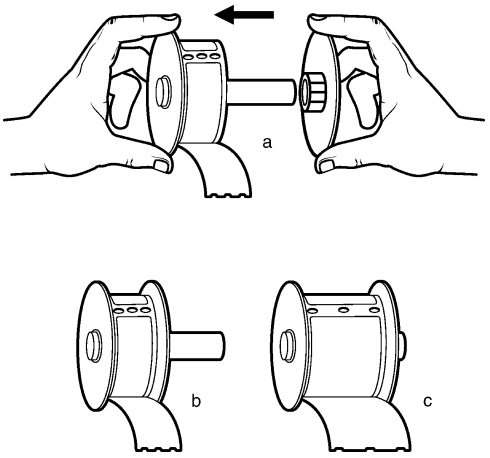


Figure 1-3. Loading labels onto the label spool.

7. Make sure that the power cord is connected. Turn on the printer. The green power light will flash and you will hear the printer's motor turning as it looks for labels to feed.
8. Place the spool inside the top cover of the LabelWriter, then thread the lead label of the roll into the feed slot on the inside of the printer base (See Figure 1-4).

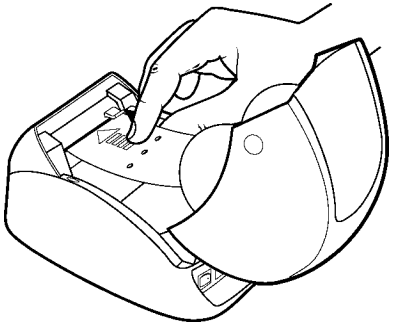


Figure 1-4. Hold the labels in one hand. Use the other hand to guide the labels into the label feed slot.

9. Push the end of the label into the feed slot until the motor grabs it and advances the labels through the printer and out the exit slot, stopping automatically at the end of the first label.

Figure 1-5. Labels loaded, ready to print.

10. Close the cover and your LabelWriter printer is ready to print labels.

Replacing a Label Roll

To replace an empty roll, or switch between different labels, follow these instructions:

1. Tear off any labels that have been fed through the printer.
2. Open the cover
3. As you lift the platen release lever, pull the label out of the platen mechanism. (See Figure 1-6 below)

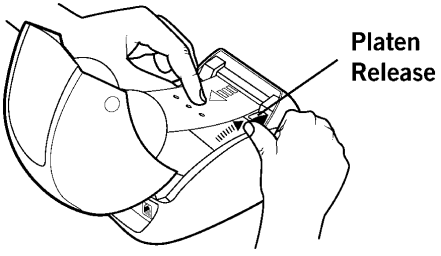


Figure 1-6. Push the platen release lever up as you pull the label back from the mechanism.

RS-232 Settings

In order for the host computer to communicate with the LabelWriter SE300 printer, the communication parameters must be set as follows:

- Baud Rate: 9600
- Data Bits: 8
- Stop Bits: 1
- Parity: None

On a computer running DOS, you can use the MODE command to configure a serial port. To do this, type the following at the DOS prompt:

```
MODE COM#: 96,N,8,1,P
```

where COM# is the serial port you are using. This could be COM1, COM2, or any valid COM port.

Most compilers provide a command or function to initialize a serial port. In the BASIC programming language, use the following command:

```
OPEN "COM:9600,N,8,1" FOR OUTPUT AS #1
```

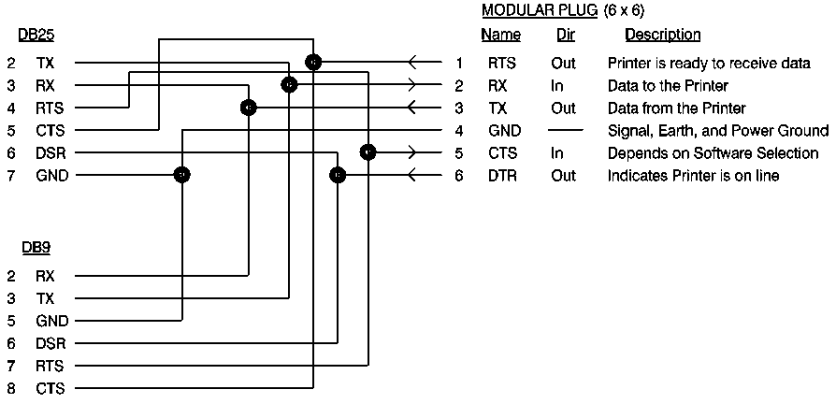
In Microsoft C/C++, use the function:

```
bios_serialcom().
```

Other C compilers offer a similar function. Consult your compiler user guide for the appropriate function to use to configure a serial port.

If you are using the Unix OS, you'll need to configure the RS232 port as a dumb printer port, with no special handling, control characters or form feeds. The LabelWriter will handle these functions internally.

Cabling



Origination (Mod. 6 x 6)	Termination (DB25S)	Termination (DB9S)	Name	Dir	Description
1	5	8	RTS	Out	Printer is ready to receive data
2	2	3	RX	In	Data to the Printer
3	3	2	TX	Out	Data from the Printer
4	7	5	GND	——	Signal, Earth, and Power Ground
5	4	7	CTS	In	Depends on Software Selection
6	6	6	DTR	Out	Indicates Printer is on line

RS-232 Signal Levels

The serial interface uses standard RS-232 signal levels as shown in Table 2-1.

Signal Level	Input	Output
MARK (1)	-27V to -5V	-5V
SPACE (0)	+5V to +27V	+12V

Table 2-1. RS-232 signal levels.

Chapter 3
Programming Overview and Notes

About This Chapter

This chapter covers all the points that need to be understood in order to program the LabelWriter correctly.

Both basic and advanced topics will be explained so that you get a clear idea of how the LabelWriter work.

Programming for the LabelWriter

The first step in programming the LabelWriter is to understand how the printer works.

As an ASCII-based printer, the LabelWriter accepts 8-bit ASCII characters as both data and commands. The ASCII table in Appendix G shows the relationship between the 8-bit values and the characters they represent. Most environments either use the ASCII character table as the default for character values or support an ASCII mode where characters are interpreted by the ASCII values. This means that sending data and commands to the printer is usually as simple as transmitting the characters from your program to the port to which the LabelWriter is connected.

A simple program to print 'Hello World' on the LabelWriter might look as follows in Qbasic for DOS.

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, "HELLO WORLD"
```

The "OPEN…" line above opens the selected COM port for printing and initializes the communication settings while the "PRINT…" line sends the data to the printer.

Commands can be sent to the printer in exactly the same way. For example, if you wanted to change the font which "Hello World" was printed into a 7-characters-per-inch font, you could look in this manual and find that the required command characters to do this are ESC and T. (ESC refers to the Escape character. By checking Appendix G, you would find that the ESC character has

a decimal value of 27.) With this information, you can construct the following program to print ‘Hello World’ in a 7-characters-per-inch font.

```
OPEN “COM1:9600,n,8,1” FOR OUTPUT AS #1
PRINT #1, CHR$(27); “T”;
PRINT #1, “HELLO WORLD”
```

In a nutshell, that’s all there is to programming for the LabelWriter. Any formatting or special effect that you may need for your output can be specified simply and easily by sending the appropriate command characters and the data to be printed.

Below, we’ll cover the ins, outs and general information that you should know before programming the LabelWriter.

Resetting the Printer

Each print job should begin with a printer reset command. This ensures that the printer always begins in a known state.

The command characters used to reset the LabelWriter are ESC (decimal value 27) and * (decimal value 42).

Command Parameters

When sending a command, all of the command characters and parameters that make up a command must be sent. This is especially important when using the bar code and graphics commands. Sending too few characters to fill the required parameters for a command will either cause the command to fail or result in subsequent data being lost.

Character Evaluation

Most of the parameters that are sent to the LabelWriter are evaluated based on their decimal value. It is very important to have a good understanding of what this means.

The ASCII character that is represented by a ‘3’ does not have a decimal value of 3 (the character '3's decimal value is 51, as listed in the ASCII table in Appendix G).

Similarly, a parameter cannot be given a value of 32 (for example) by sending the ASCII character represented by '3' and the ASCII character represented by '2.'

By referencing the ASCII table, you will notice that the space character has a decimal value of 32. Therefore, to set a parameter to a value of 32, you should send a space character.

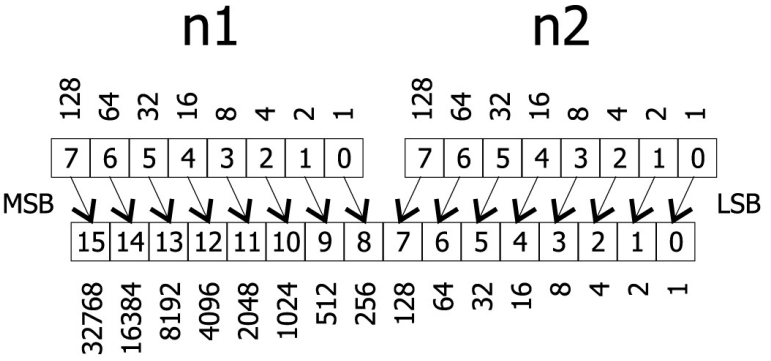
Some commands accept parameters by either their decimal value or the representative character. For example, the set print orientation command (GS V) interprets both a NULL (ASCII decimal value of 0) and the '0' character as meaning the same thing. This was done to ensure backwards compatibility with the original LabelWriter SE and should not be assumed to be true for all commands in general.

16-Bit Character Parameters

The maximum value a single 8-bit character can represent is 255. Some commands, though, can take values that are greater than 255. The set horizontal starting position command (ESC X), for example, specifies a distance (in dots) that the next text object will print from the left margin. Because a dot is only $1/8^{th}$ of a millimeter, a value of 255 would place the object only a little over 31mm from the left margin. To allow for longer distances to be specified, two 8-bit characters are used to specify the value, by combining them into one 16-bit character. Though the calculations are all done within the LabelWriter, it is important to understand how the characters are handled.

The decimal value of the first character that is sent (usually noted as n1) is multiplied by 256. The decimal value of the second character sent (usually noted as n2) is then added to this.

Below is a graphical representation of how this works.



To send a value under 256 to a command that takes the *n1 n2* parameters, simply send the first character with a 0 value. For values greater than 256 but less than 512, the first parameter should be sent with a value of 1. For values greater than 512 but less than 768, the first parameter should be set to 2, and so on.

Conversions

Converting from dots to inches using the *n1 n2* parameters can seem a bit challenging at first, but is really no more complex than multiplication and division. The table below lists some common values and their relationship.

Inches	Dots	n1	n2
0.5	101	0	101
1.0	203	0	203
1.5	304	1	48
2.0	406	1	150
2.5	507	1	251
3.0	609	2	97
3.5	710	2	198
4.0	812	3	44

Font Statistics

The table below lists the statistics for the 5 internal fonts the LabelWriter supports. Height and Width are expressed in terms of dots.

Font	Height	Width	Horizontal cpi	Vertical cpi
ESC S	16	10	20.3	12.7
ESC P	24	12	16.9	8.4
ESC M	32	16	12.7	6.4
ESC U	32	20	10.2	6.4
ESC T	56	28	7.3	3.6

Objects

Objects are the basic units that the LabelWriter prints. An object can be either a line of text characters, a bar code, a landscape graphic, a landscape line, or an EL dot line. Each of these objects has different rules relating to them, as discussed below.

Objects can also be either active or completed. An active object is one that is still receiving the data that composes it. A completed object is one that has been terminated. A line of text that has not yet received a line feed or carriage return is a good example of an active object. Until a terminator character, like a line feed, is sent, more text characters can be added to the text object. Bar code and graphic objects do not require special terminator characters (such as line feeds). Instead they are considered complete as soon as they receive the correct amount of data.

Print Modes

Before we move on to discuss the specific objects that the LabelWriter supports, it is important to cover the different print modes in which the LabelWriter may print the objects.

The LabelWriter possesses three modes of printing: EL (bitmap graphics) mode, portrait printing mode, and landscape printing mode. Each mode operates under very different rules. These rules are detailed below.

EL Mode

The LabelWriter SE300 command sets includes the entire command set of the LabelWriter EL, as well as the ASCII commands that will be discussed later. EL mode refers to printing using the LabelWriter EL printing commands. Because the LabelWriter EL commands are an inherent part of the LabelWriter SE300, there are no special commands to switch to LabelWriter EL emulation. Data may be sent exactly as though it were being sent to a LabelWriter EL and the LabelWriter SE300 will process it and print correctly.

At its most basic level, a LabelWriter is a direct thermal printer that creates images on a label by heating the individual elements of its print head. On a LabelWriter SE300, the print head has 448 elements (or dots). When it prints, some of these dots will be turned on (heated), and the printer's motor will advance the paper by a step. Any thermal paper that is under a heated element will then turn black. For each motor step, a dot line is printed. By controlling the length of each step, the LabelWriter can print in either 203x203 dpi or 203x138 resolution, as a longer step makes larger dots and therefore results in lower resolution.

Each dot line is a complete object and is printed by the LabelWriter as soon as it is processed. Because of this, an EL dot line should not be sent while a portrait object or a landscape page is being constructed.

Portrait Mode

On power-up, the LabelWriter is set for portrait printing. In portrait mode, text characters travel out of the printer from the top of the character to the bottom. It is also possible to switch to this mode using the set print orientation command (GS V).

Portrait mode is also referred to as immediate mode printing, because each object that is sent to the printer while the printer is in portrait mode is printed as soon as the object is completed. No two objects may be printed on the same line in this mode because the paper is advanced as each object is completed and printed.

Certain commands are disabled or work differently while the LabelWriter is in portrait mode. Exact details can be found under each command's description.

Landscape Mode

By using the set print orientation command (GS V), you can configure the LabelWriter for landscape printing. In landscape printing, text characters travel out of the printer from the left side of the character to the right. Before the LabelWriter can be switched to landscape printing, though, you must send the set characters per line command (GS t). The set characters per line command defines the width of the landscape page.

A landscape page is defined as the area allocated by the LabelWriter in which landscape text, graphic, bar code, and line objects may be printed. The height of this landscape page always equals the width of the Label Writer's print head. The width of the landscape page is calculated when the set characters per line command (GS t) is sent. The width of the page is equal to the number of characters per line multiplied by the width of the current font. The default font is 16 dots wide (2mm) and the default number of characters per line is 80.

In landscape mode, completed objects are placed within a memory buffer in the LabelWriter and are only printed when the landscape page is terminated. A form feed (FF) character is usually used to terminate a landscape page. This causes the LabelWriter to print the objects that have been placed on the landscape page and advance to the next label.

After a landscape page is printed, the LabelWriter will remain in landscape mode. If more objects are sent to the LabelWriter, a new landscape page will be allocated, with a width equal to the previous page. To change the width of a landscape page, you must send the set characters per line command (GS t) followed by the set print orientation command (GS V).

Because the LabelWriter does not print objects immediately, multiple objects can be placed on the same line. The set horizontal starting position (ESC X) and set vertical starting position (ESC Y) commands allow objects to be placed at any location within a landscape page. In the case of objects that are positioned to overlap each other, the first object that is sent to the printer will be printed in the overlapping area.

Objects that would normally print below the bottom of the landscape page can be either wrapped to the next label or truncated by using the select line wrap/truncate modes command (GS T).

Unless the set vertical starting position command (ESC Y) is used, the first object sent will be printed at the top of the landscape page. When using labels that are narrower than the LabelWriter's print head, the top of the landscape page will be above the top of the label stock. In these cases, you should use the set vertical starting position command (ESC Y) to position the object on an area of the landscape page that corresponds to the label.

General Notes on Print Modes

The LabelWriter may be in only one print mode at a time. Multiple areas may be printed in different print modes on a single label, but these areas may only be adjacent to one another, they may not overlap.

In any mode, the set feed length command (GS L) is used to determine how far the LabelWriter will feed in search of a top-of-form hole. If the LabelWriter finds a top-of-form hole before this maximum feed distance is reached, it will stop at that point, rather than continuing. This command is only needed when dealing with continuous-feed paper.

Text Objects

A text object is simply a line of printable characters. A text object is created whenever the LabelWriter receives a printable character that is not otherwise part of a command. Once it's created, a text object will remain active until it is terminated.

While a text object is active, any printable characters sent to the LabelWriter will be added to that text object. The only exceptions are printable characters that are sent as part of a command. While a text object is active, commands that alter text line attributes (such as font and double-height character commands) are ignored. Commands that alter text character attributes (such as double wide and inverse) may be sent at any time, though.

Line attributes include the five basic fonts (ESC S, P, M, U, and T), plus the double-height font command (GS DC2). These commands may not be issued while a text object is active; instead they should be issued before a text object is begun. The font line attribute persists until another font command is received. The double-height line attribute persists either until the cancel double height command (GS DC3) is sent or the current font is changed.

The character attribute commands include the set font to double wide (SO) and set inverse print mode (GS RS) commands. These commands may be issued or canceled at any time. Character attributes persist only until the end of a text object.

A text object can be terminated with a carriage return, a line feed, or both, in either combination. If the length of the text object exceeds the space allowed for printing, it will either wrap to the next line or truncate at the end of the printable area. The decision to wrap or truncate is determined by the select line wrap/truncate mode command (GS T). By default, text objects will wrap to the next line.

Bar Code Objects

A bar code object is created by the print bar code command (GS k). Specified within the command is the symbology to be used, the amount of data to be encoded, and the data itself. Other

attributes of the bar code, such as height and width, can be set using other commands.

The set bar code height command (GS h) specifies the height of the bar code in dots, or $1/8^{th}$ mm. The maximum height for a bar code is 256 dots, or 32mm. In cases where a taller bar code is needed, a second bar code can be printed below the first at the same left offset.

The set bar code module width (GS w) and set bar code element width (GS W) commands can be used to alter the width of the bar code. See the command descriptions later in the next chapter for a full explanation of the differences between these two commands.

The POSTNET bar code symbology is an exception and does not respond to any of these commands. Instead, it always prints within the U.S. Postal Service's specifications.

The limitations of each symbology must be adhered to when sending data for a bar code. For example, you should not send alphabetic characters to symbologies that only accept numeric data (like the UPC/EAN symbology).

Other items must also be considered when printing bar codes. You must leave sufficient blank space on either side of the bar code to create a quiet zone. You must also select a good ratio/element size if the default values are not being used, and you must allow adequate room for the bar code to be printed on the label. If you ignore any of these items, the bar code that is printed may be unreadable.

A bar code object is self-terminating and will be processed as soon as the proper amount of data has been sent to it. The print bar code command's (GS k) second parameter specifies whether a fixed amount of data will be sent or whether delimiters will be used. In either case, the data sent must match the parameter setting. If a fixed number of characters are specified, then the exact number of characters specified must be sent. If delimiters are indicated, then matching characters must be sent before and after the bar code data to specify the beginning and end of the data. If an incorrect number of characters or delimiters are sent, the LabelWriter will not print correctly.

Bar codes that are too long to fit within the printable area of a label are truncated. This usually results in an unreadable bar code being printed. To correct this condition, you must set a narrower ratio, encode fewer digits, or use a more compact symbology.

Graphic Objects

Graphic objects are created by the landscape mode graphics command (GS *).

Graphic objects may only be printed as part of a landscape page. To print a graphic without entering landscape mode, you must use EL mode graphic commands.

No landscape graphic may be wider than 256 dots, though they may be as tall as the width of the LabelWriter's print head. If you need to print a graphic wider than 256 dots, you must either subdivide it into narrower sections or print it using EL mode graphics commands.

For more information about landscape graphic objects, see the descriptions of the graphics commands in this manual.

Line Objects

Line objects are created using the draw line in landscape mode command (GS l).

Line objects may only be printed as part of a landscape page. If the length of a line object is set to exceed the printable area of a label, the line will be truncated at the end of the printable area.

Chapter 4
LabelWriter Command Reference

About This Chapter

This chapter describes the commands you can use to program your LabelWriter SE300 printer. Below are some of the things you can do with the commands:

- Send linefeeds and carriage returns
- Define bar code size and position
- Return firmware revision and printer status information
- Define label size, and paper orientation
- Print graphics in inverse text mode and print enlarged characters

See the pages that follow for listings of listings of commands arranged alphabetically and by function.

SE300 Commands Alphabetical List

NAME	DESCRIPTION	PAGE
HT	Horizontal Tab	26
LF	Line Feed	27
FF	Form Feed	28
CR	Carriage Return	29
SO	Set Font to Double Wide	30
DC4	Cancel Double Wide Mode	31
SYN	EL Mode Graphics	32
ETB	EL Mode Compressed Graphics	34
20h - FFh	Printable Characters	36
ESC *	Reset to Defaults	37
ESC @	Reset to Power-up Condition	38
ESC A	Return Printer Status	39
ESC B	Set Dot Tab	40
ESC D	Set Bytes per Line	41
ESC E	Form Feed	42
ESC F 1	Feed Sublines	43
ESC J *n*	Feed *n* Sublines	43
ESC L	Set Feed Length	45
ESC M	Set Font to 12 cpi	46
ESC P	Set Font to 16 cpi	47
ESC Q	Set Top Margin	48
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Command Reference

The commands are listed by name in alphabetical order. Each section contains a description of the command. The ASCII,

hexadecimal, and decimal values for each command are also provided.

See Appendix A for examples (in the BASIC computer language) of how the commands are used

See Appendix G for a list of ASCII, hexadecimal, and binary codes.

HT Horizontal Tab

DESCRIPTION

Moves cursor position to next multiple of eight single-width characters. Note that double-width characters count as two single-width characters. If the HT command causes the cursor to move beyond the printable area, the text will wrap to the next line.

EXPRESSION

ASCII	HT
Decimal	9
Hex	9

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 83, Example 1.

For an example of this command using the Caret feature see page 94, Example 1

LF Line Feed

DESCRIPTION

Prints the current line of text and advances the text position to the beginning of the next line. Note that the linefeed, linefeed/carriage return, carriage return, and carriage return/linefeed instructions all behave as a single linefeed. If the current line extends beyond the printable area, the text will wrap to the next printable area.

All character attributes (including inverse and double-wide text) will be cleared after the line is printed.

EXPRESSION

ASCII	LF
Decimal	10
Hex	0A

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 83, Example 2.

For an example of this command using the Caret feature see page 94, Example 2

FF Form Feed

DESCRIPTION

Prints the contents of the text buffer and advances the print media. The distance the media will advance depends on two factors: the feed distance specified by the GS L command and the presence of a punch hole. The LabelWriter will advance until a punch hole is detected or until the feed distance (specified by the GS L command) has been reached.

When the printer is powered on, the feed distance stored in NVRAM is used as the default distance; the factory default is 7½ inches. A new feed distance specified by the GS L command will override the NVRAM setting until the printer is either powered down or a reset command is issued (by the ESC @ or ESC * command).

The FF and ESC E commands are the same and produce the same result.

EXPRESSION

ASCII	FF
Decimal	12
Hex	0C

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 83, Example 3.

For an example of this command using the Caret feature see page 94, Example 3.

CR Carriage Return

DESCRIPTION

Prints the current line of text and advances the text position to the beginning of the next line. Note that the linefeed, linefeed/carriage return, carriage return, and carriage return/linefeed instructions all behave as a single linefeed. If the current line extends beyond the printable area, the text will wrap to the next printable area.

All character attributes (including inverse and double-wide text) will be cleared after the line is printed.

EXPRESSION

ASCII	CR
Decimal	13
Hex	0D

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 83, Example 4.

For an example of this command using the Caret feature see page 94, Example 4.

SO Set Font to Double Wide

DESCRIPTION

Causes all the text that follows the command on the same line to be printed as double-wide characters. Double-wide characters are canceled by a line feed (CR or LF) or the DC4 command.

Double wide is a character attribute and is available on a character-by-character basis. Double-wide text can be canceled at any point on the line. Double-wide text is automatically canceled at the end of the line. Therefore, subsequent lines will not be printed as double-wide text unless the SO command is re-issued at the beginning of each line.

SEE ALSO

DC4

EXPRESSION

ASCII	SO
Decimal	14
Hex	0E

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 84, Example 5.

For an example of this command using the Caret feature see page 94, Example 5.

DC4 Cancel Double Wide Mode

DESCRIPTION

Cancels double-wide text printing and returns the text to normal.

SEE ALSO

SO
ESC W

EXPRESSION

ASCII	DC4
Decimal	20
Hex	14

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 84, Example 6.

For an example of this command using the Caret feature see page 95, Example 6.

DESCRIPTION

Provided for LabelWriter EL compatibility.

SYN is a synchronization character used to encode EL bitmap print data. The number of bytes in each string is controlled by the ESC D command. The starting position (left margin) is controlled by the ESC B command. The control electronics in the printer do not check the validity of the bitmap data, therefore, it is the responsibility of the host software to send the correct number of data bytes for the width of the print head in use by the printer.

The print head forms the image by heating a row of resistive elements that blacken the thermally sensitive label material. The resistive elements are 0.125 millimeters square (0.00492 inches) and are spaced at eight dots per millimeter (203.2 dots per inch) apart. The print head on the LabelWriter SE300 contain 448 elements. When a line is to be printed, the control electronics in the printer load the desired data into a serial shift register (the print head). The serial shift register has one location for each print element. A “1” in any given location causes the corresponding dot to be printed; a “0” leaves the dot un-printed. The most significant bit (bit 7) prints at the left margin.

There is no command for clearing the shift register, therefore, the entire register must be loaded for each print line in order to flush out the old data. To reset the LabelWriter after a synchronization error or to recover from an unknown state, the host computer should send at least fifty-seven (57) ESC characters, followed by an A, to request the printer to return the status byte. A minimum of 57 ESC characters are required because this amount exceeds the longest possible string of bitmap data bytes that the LabelWriter expects.

SEE ALSO

ESC B
ESC D
ETB

EXPRESSION

ASCII	SYN	*d1…dn*
Decimal	22	*d1…dn*
Hex	16	*d1…dn*

PARAMETERS

d1…dn = n bytes of bitmap print data (max 56 bytes for SE300 print heads).

EXAMPLE

For an example of this command's usage, see Appendix A, page 84, Example 7.

For an example of this command using the Caret feature see page 95, Example 7

ETB EL Mode Compressed Graphics

DESCRIPTION

Provided for LabelWriter EL compatibility.

The ETB command is a synchronization character used to encode compressed EL bitmap print data. Print data is encoded in strings of 8-bit bytes preceded by a singe ETB (Hex 17) character. The control electronics in the printer do not check the validity of the bitmap data.

Data compression is done via a form of run-length encoding. Bit seven (the sign bit) of a compressed character represents the value to be printed:

0 = white space, 1 = a printed pixel. Bits 6 through 0 represent the number of consecutive bits of the selected value plus 1.

Examples:
00 = 1 white pixel
80 = 1 printed pixel
0F = 16 white pixels
FF = 128 printed pixels

The data sent to the LabelWriter is handled on a line-by-line basis, so compressed lines may be intermixed with normal lines. In addition, the compressed mode also uses the set bytes per line command (ESC D) to determine how much data from the host to expect for each line. However, the sum of the pixels *must* be equal to the bytes per line variable (ESC D, default on the SE300 is 56) multiplied by 8. No error checking is done on the incoming data and unexpected results will occur if the above caution is not observed. Below is a sample compressed line for a ESC D 24 setting:

17 OF 8F 20 A0 20 A0 0F 8F

which would translate to:

16 white pixels
16 printed pixels
32 white pixels
32 printed pixels
32 white pixels
32 printed pixels
16 white pixels
16 printed pixels

Total 192 pixels = 24 bytes x 8

Use of the ETB command, along with the ESC D and ESC B commands, can drastically reduce the number of data bytes

required to form a print image. Refer to the description of the SYN command for more information on printing bitmap data.

SEE ALSO

SYN
ESC B
ESC D

EXPRESSION

ASCII	ETB	*d1…dn*
Decimal	23	*d1…dn*
Hex	17	*d1…dn*

PARAMETERS

d1…dn = *n* bytes of bitmap print data as per GS D setting.

EXAMPLE

For an example of this command's usage, see Appendix A, page 84, Example 8.

For an example of this command using the Caret feature see page 95, Example 8.

20h - FFh Printable Characters

DESCRIPTION

These characters, while not part of an escape (command) sequence, will be printed using the currently selected font. The standard, printable ASCII characters are associated with their normal values, which range from decimal value 32 to decimal value 126. The other four values are represented as follows:

EXPRESSION

Decimal	32 - 126, 153, 169, 174, 176
Hex	20 - 7E, 99, A9, AE, B0

Character	Name	Decimal	HEX
™	Trademark	153	99
©	Copyright	169	A9
®	Registered	174	AE
º	Degree	176	B0

See Appendix G for a summary of character codes.

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 85, Example 9.

For an example of this command using the Caret feature see page 95, Example 9

ESC * Reset to Defaults

DESCRIPTION

Returns the printer to its power-up condition, clears all buffers, and resets all character attributes. The ESC * command is the same as the ESC @ command.

SEE ALSO

ESC @

EXPRESSION

ASCII	ESC	*
Decimal	ESC	42
Hex	ESC	2A

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 85, Example 10.

For an example of this command using the Caret feature see page 96, Example 10.

ESC @ Reset to Power-up Condition

DESCRIPTION

Returns the printer to its power-up condition, clears all buffers, and resets all character attributes. The ESC @ command is the same as the ESC * command.

SEE ALSO

ESC *

EXPRESSION

ASCII	ESC	@
Decimal	27	64
Hex	1B	40

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 85, Example 11.

For an example of this command using the Caret feature see page 96, Example 11

ESC A Return Printer Status

DESCRIPTION

Provided for LabelWriter EL compatibility. ESC A is identical to the GS S command described in this guide. See the description of the GS S command for information on how to return the printer status.

ESC B Set Dot Tab

DESCRIPTION

Provided for LabelWriter EL compatibility. ESC B defines the left-hand starting position for the placement of EL mode bitmap data. ESC B is used in conjunction with the SYN (EL Mode Graphics) and ETB (EL Mode Compressed Graphics) commands.

The LabelWriter SE300 prints up to 56 bytes (448 dots) of bitmap data. ESC B allows the starting point (the left margin) to be relocated from the default position (byte 0), which is the extreme left side of the label, to any point, up to the right-hand margin (byte 56). The increments for relocating the starting point are in millimeters. Use of this command, along with the ESC D command, can drastically reduce the number of data bytes required to skip blank areas.

SEE ALSO

ESC D
SYN
ETB

EXPRESSION

ASCII	ESC	B	*n1*
Decimal	27	66	*n1*
Hex	1B	42	*n1*

PARAMETERS

n1 = starting position from the left in millimeters (default = 0)
n1 = 0 to 55

EXAMPLE

For an example of this command's usage, see Appendix A, page 85, Example 12.

For an example of this command using the Caret feature see page 96, Example 12

ESC D Set Bytes per Line

DESCRIPTION

Provided for LabelWriter EL compatibility.

This command defines the number of bytes in a single line of EL bitmap data. The LabelWriter SE300 prints up to 56 bytes (448 dots) of bitmap data. Use of this command, along with the ESC B command, can drastically reduce the number of data bytes required to skip blank areas.

SEE ALSO

ESC B
SYN
ETB

EXPRESSION

ASCII	ESC	D	*n1*
Decimal	27	68	*n1*
Hex	1B	44	*n1*

PARAMETERS

n1 = number of bytes per line (default = the allowed maximum, 56 bytes)

EXAMPLE

For an example of this command's usage, see Appendix A, page 86, Example 13.

For an example of this command using the Caret feature see page 96, Example 13

ESC E Form Feed

DESCRIPTION

Prints the contents of the text buffer and advances the print media. The distance the media will advance depends on two factors: the feed distance specified by the GS L command and the presence of a punch hole. The LabelWriter will advance until a punch hole is detected or until the feed distance (specified by the GS L command) has been reached.

When the printer is powered on, the feed distance stored in NVRAM is used as the default distance; the factory default is 7½ inches. A new feed distance specified by the GS L command will override the NVRAM setting until the printer is either powered down or a reset command is issued (by the ESC @ or ESC * command).

The FF and ESC E commands are the same and produce the same result.

SEE ALSO

FF

EXPRESSION

ASCII	ESC	E
Decimal	27	69
Hex	1B	45

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 86, Example 14.

For an example of this command using the Caret feature see page 96, Example 14.

ESC F 1 Feed Sublines

DESCRIPTION

Provided for LabelWriter EL compatibility.

Note that this command functions identically to the ESC J command. See ESC J for more details

ESC J — Feed *n* Sublines

DESCRIPTION

Feeds *n* number of sublines (*n*/203 inch). This command causes the printer to print data stored in the buffer and then feed *n* number of dot lines. This command is similar to the GS d command.

SEE ALSO

GS d

EXPRESSION

ASCII	ESC	J	*n*
Decimal	27	74	*n*
Hex	1B	4A	*n*

PARAMETERS

n = the desired number of sublines to feed

EXAMPLE

For an example of this command's usage, see Appendix A, page 86, Example 15.

For an example of this command using the Caret feature see page 97, Example 15

ESC L Set Feed Length

DESCRIPTION

Provided for LabelWriter EL compatibility. See the GS L command for information.

ESC M — Set Font to 12 cpi

DESCRIPTION

Changes to the 12 cpi normal font. The cell dimension is 32H x 16W. This is the default font.

Fonts may only be changed at the beginning of a line, prior to any printable characters. This font will remain in effect until the printer is reset (by the ESC @ or ESC * command) or another font is selected.

SEE ALSO

ESC P

ESC S

ESC T

ESC U

EXPRESSION

ASCII	ESC	M
Decimal	27	77
Hex	1B	4D

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 86, Example 16.

Font	Height	Width	Horizontal cpi	Vertical cpi
ESC S	16	10	20.3	12.7
ESC P	24	12	16.9	8.4
ESC M	32	16	12.7	6.4
ESC U	32	20	10.2	6.4
ESC T	56	28	7.3	3.6

ESC P — Set Font to 16 cpi

DESCRIPTION

Changes to the 16 cpi mini font. The cell dimension is 24H x 12W.

Fonts may only be changed at the beginning of a line, prior to any printable characters. This font will remain in effect until the printer is reset (by the ESC @ or ESC * command) or another font is selected.

SEE ALSO

ESC M, ESC S, ESC T, ESC U

EXPRESSION

ASCII	ESC	P
Decimal	27	80
Hex	1B	50

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 87, Example 17.

For an example of this command using the Caret feature see page 97, Example 17

Font	Height	Width	Horizontal cpi	Vertical cpi
ESC S	16	10	20.3	12.7
ESC P	24	12	16.9	8.4
ESC M	32	16	12.7	6.4
ESC U	32	20	10.2	6.4
ESC T	56	28	7.3	3.6

ESC Q Set Top Margin

DESCRIPTION

Provided for LabelWriter EL compatibility.

ESC S — Set Font to 20 cpi

DESCRIPTION

Changes to the 20 cpi micro font. The cell dimension is 16H x 10W.

Fonts may only be changed at the beginning of a line, prior to any printable characters. This font will remain in effect until the printer is reset (by the ESC @ or ESC * command) or another font is selected.

SEE ALSO

ESC M, ESC P, ESC T, ESC U

EXPRESSION

ASCII	ESC	S
Decimal	27	83
Hex	1B	53

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 87, Example 18.

For an example of this command using the Caret feature see page 97, Example 18.

Font	Height	Width	Horizontal cpi	Vertical cpi
ESC S	16	10	20.3	12.7
ESC P	24	12	16.9	8.4
ESC M	32	16	12.7	6.4
ESC U	32	20	10.2	6.4
ESC T	56	28	7.3	3.6

ESC T — Set Font to 7 cpi

DESCRIPTION

Changes to the 7 cpi headline font. The cell dimension is 56H x 28W.

Fonts may only be changed at the beginning of a line, prior to any printable characters. This font will remain in effect until the printer is reset (by the ESC @ or ESC * command) or another font is selected.

SEE ALSO

ESC M, ESC P, ESC S, ESC U

EXPRESSION

ASCII	ESC	T
Decimal	27	84
Hex	1B	54

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 87, Example 19.

For an example of this command using the Caret feature see page 97, Example 19

Font	Height	Width	Horizontal cpi	Vertical cpi
ESC S	16	10	20.3	12.7
ESC P	24	12	16.9	8.4
ESC M	32	16	12.7	6.4
ESC U	32	20	10.2	6.4
ESC T	56	28	7.3	3.6

ESC U — Set Font to 10 cpi

DESCRIPTION

Changes to the 10 cpi headline font. The cell dimension is 32H x 20W.

Fonts may only be changed at the beginning of a line, prior to any printable characters. This font will remain in effect until the printer is reset (by the ESC @ or ESC * command) or another font is selected.

SEE ALSO

ESC M, ESC P, ESC S, ESC T

EXPRESSION

ASCII	ESC	U
Decimal	27	85
Hex	1B	55

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 87, Example 20.

For an example of this command using the Caret feature see page 97, Example 20.

Font	Height	Width	Horizontal cpi	Vertical cpi
ESC S	16	10	20.3	12.7
ESC P	24	12	16.9	8.4
ESC M	32	16	12.7	6.4
ESC U	32	20	10.2	6.4
ESC T	56	28	7.3	3.6

ESC V Return Firmware Revision

DESCRIPTION

Returns six ASCII characters (REV. E) that represents the firmware revision of the of the LabelWriter EL which the SE300 is 100% compatible with.

EXPRESSION

ASCII	ESC	V
Decimal	27	86
Hex	1B	56

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 87, Example 21.

ESC W Wrap Data

DESCRIPTION

Causes the characters *n1* and *n2* to be echoed back to the host. As soon as *n1* is received by the printer, the printer, in turn, will transmit *n1* back to the host. Your program should wait to receive *n1* before outputting *n2*. If you don't wait, you may lose *n1*. If *n1* and *n2* are received successfully by the host, you can be reasonably assured that there is a LabelWriter attached to the serial port and your program can communicate with the printer.

EXPRESSION

ASCII	ESC	W	*n1*	*n2*
Decimal	27	87	*n1*	*n2*
Hex	1B	57	*n1*	*n2*

PARAMETERS

n1 = first character to echo
n2 = second character to echo

EXAMPLE

For an example of this command's usage, see Appendix A, page 87, Example 22

ESC X Set Horizontal Starting Position

DESCRIPTION

This command is used in landscape printing to set a new offset from the left margin from which to begin printing text and bar code objects. Distance is specified in dots (1 dot = 1/203 of an inch). The *n1* and *n2* parameters are evaluated to form a 16-bit word as follows: first, the *n1* parameter's decimal value is multiplied by 256, then the result is added to the decimal value of the *n2* parameter.

EXPRESSION

ASCII	ESC	X	*n1*	*n2*
Decimal	27	88	*n1*	*n2*
Hex	1B	58	*n1*	*n2*

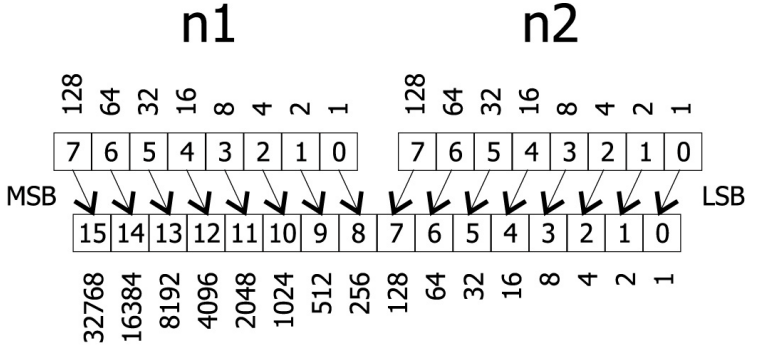
PARAMETERS

n1 = high-order byte of 16-bit word that specifies distance
n2 = low-order byte of 16-bit word that specifies distance

EXAMPLE

For an example of this command's usage, see Appendix A, page 87, Example 23.

For an example of this command using the Caret feature see page 98, Example 23



ESC Y Set Vertical Starting Position

DESCRIPTION

This command is used in landscape printing to set a new offset from the top margin from which to begin printing text and bar code objects. Distance is specified in millimeters. The LabelWriter SE300 has a 56 millimeters wide print head.

EXPRESSION

ASCII	ESC	Y	*n*
Decimal	27	89	*n*
Hex	1B	59	*n*

PARAMETERS

n = the offset distance in millimeters

EXAMPLE

For an example of this command's usage, see Appendix A, page 88, Example 24.

For an example of this command using the Caret feature see page 98, Example 24.

ESC a Return Hardware Status

DESCRIPTION

Provided for LabelWriter EL compatibility.

See also the GS S command.

ESC y Set 203 x 203 dpi

DESCRIPTION

Provided for LabelWriter EL compatibility.

ESC z Set 136 x 203 dpi

DESCRIPTION

Provided for LabelWriter EL compatibility.

GS DC2 Set Font to Double Height

DESCRIPTION

Causes the current font to be printed at twice its normal height. The double-height setting will remain in effect until the current line attributes are cleared

SEE ALSO

GS DC3

EXPRESSION

ASCII	GS	DC2
Decimal	29	18
Hex	1D	12

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 88, Example 25.

For an example of this command using the Caret feature see page 98, Example 25.

GS DC3 Cancel Double Height

DESCRIPTION

Cancels the double-height characters and returns to normal size. This command must be sent at the beginning of a line, in front of any printable characters.

SEE ALSO

GS DC2

EXPRESSION

ASCII	GS	DC3
Decimal	29	19
Hex	1D	13

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 89, Example 26.

For an example of this command using the Caret feature see page 98, Example 26

GS RS Set Inverse Print Mode

DESCRIPTION

Causes all the data that follows the command and appears on the current line to be printed as inverse characters (white on black). Inverse characters are canceled when character attributes are canceled.

SEE ALSO

GS US

EXPRESSION

ASCII	GS	RS
Decimal	29	30
Hex	1D	1E

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 89, Example 27.

For an example of this command using the Caret feature see page 99, Example 27.

GS US Cancel Inverse Print Mode

DESCRIPTION

Cancels the inverse print mode (white on black) and returns text back to its normal attributes for the remainder of the current line.

SEE ALSO

GS RS

EXPRESSION

ASCII	GS	US
Decimal	29	31
Hex	1D	1F

PARAMETERS

None

EXAMPLE

For an example of this command's usage, see Appendix A, page 89, Example 28.

For an example of this command using the Caret feature see page 89, Example 28.

GS * Landscape Mode Graphics

DESCRIPTION

Prints a graphic image (in landscape mode only).

EXPRESSION

ASCII	GS	*	*n1*	*n2*	*t*	*h*	*w*	*d1…dm*
Decimal	29	42	*n1*	*n2*	*t*	*h*	*w*	*d1…dm*
Hex	1D	2A	*n1*	*n2*	*t*	*h*	*w*	*d1…dm*

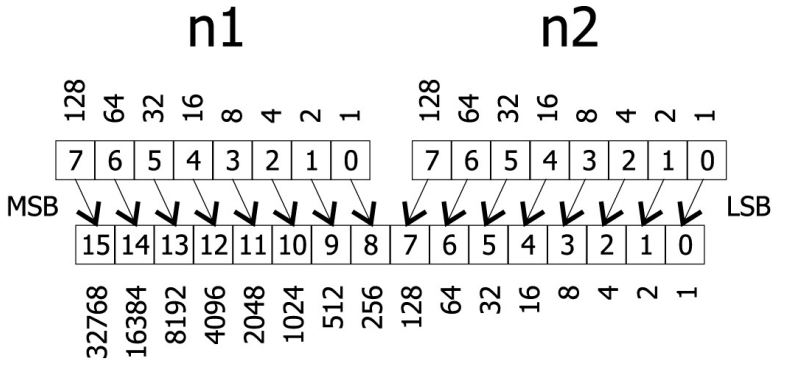
PARAMETERS

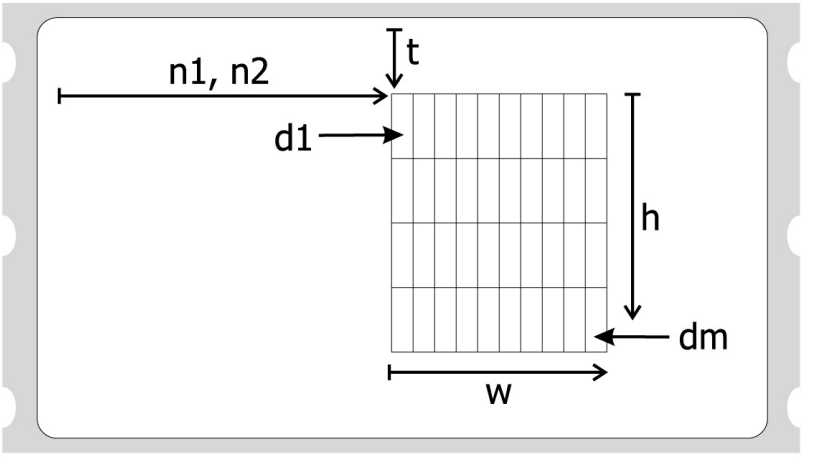
n1 = most significant byte of left offset
n2 = least significant byte of left offset
t = offset from top (in millimeters)
h = height of graphic (in millimeters)
w = width of graphic (in dots)
d1 = first data byte
dm = last data byte (h * w)

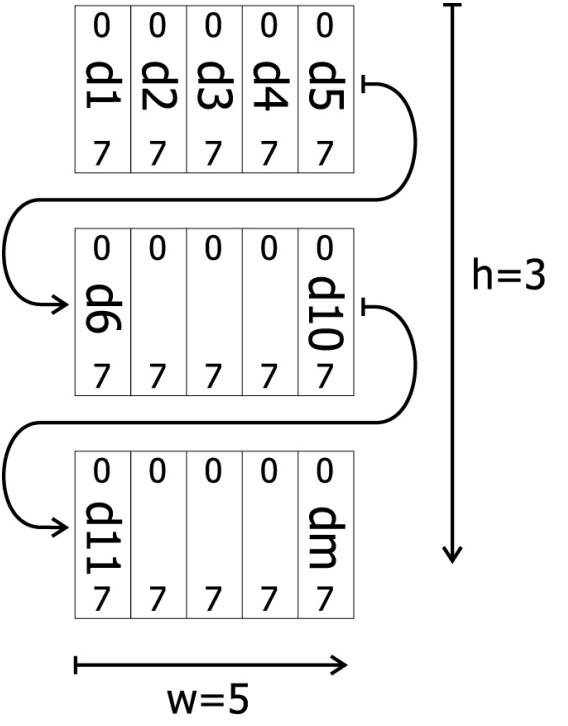
EXAMPLE

For an example of this command's usage, see Appendix A, page 89, Example 29.

For an example of this command using the Caret feature see page 99, Example 29.




n1, n2
t
d1
h
dm
w


0 d1 7
0 d2 7
0 d3 7
0 d4 7
0 d5 7
0 d6 7
0 7
0 7
0 7
0 d10 7
0 d11 7
0 7
0 7
0 7
0 dm 7
h=3
w=5

GS A Starting Position of Bar Code

DESCRIPTION

Defines the distance from the left where the first bar code will print. The distance is represented in n/203 inch (dot) increments. This command is used to center a bar code on a text line.

EXPRESSION

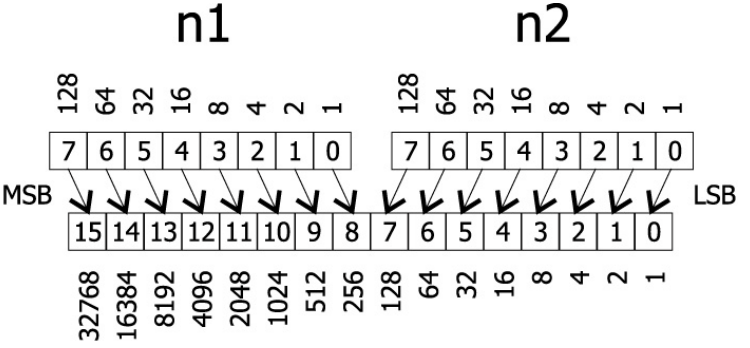
ASCII	GS	A	*n1*	*n2*
Decimal	29	65	*n1*	*n2*
Hex	1D	41	*n1*	*n2*

PARAMETERS

n1 = the most significant byte
n2 = the least significant byte
Inches/203 = (*n1* * 256) + *n2*

EXAMPLE

For an example of this command's usage, see Appendix A, page 90, Example 30. For Caret example see page 99.



Lengh (in inches)	# of Dots	n1	n2
0.5	102	0	102
1.0	203	0	203
2.0	406	1	150
3.0	609	2	97

DESCRIPTION

Sets the distance the print media will advance upon receipt of a form feed (FF or ESC E) command. The distance is defined as n/203 inches. The number of dots = *n1* * 256 + *n2*.

EXPRESSION

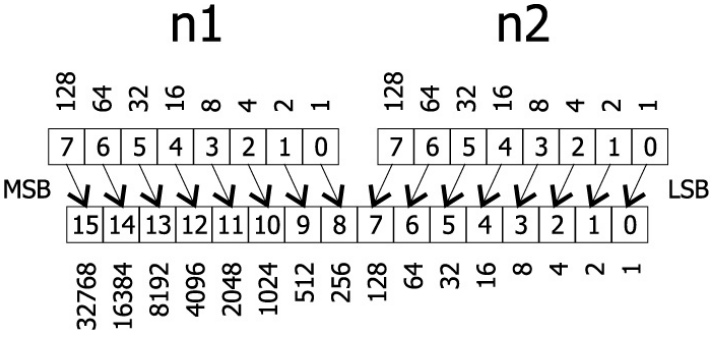
ASCII	GS	L	*n1*	*n2*
Decimal	29	76	*n1*	*n2*
Hex	1D	4C	*n1*	*n2*

PARAMETERS

n1 = the most significant byte
n2 = the least significant byte
Inches/203 = (*n1* * 256) + *n2*

EXAMPLE

For an example of this command's usage, see Appendix A, page 90, Example 31. For a Caret example see page 100.



Lengh (in inches)	# of Dots	n1	n2
0.5	102	0	102
1.0	203	0	203
2.0	406	1	150
3.0	609	2	97
4.0	812	3	44
5.0	1015	3	247
6.0	1218	4	194
7.0	1421	5	141
8.0	1624	6	88

DESCRIPTION

Returns a single status byte. The printer status is determined by testing the individual bits within the returned status byte. Only bits that have defined values should be tested. Do not test bits designated as reserved.

When polling for the status byte, your program must wait for the status byte to arrive. The printer will take several milliseconds to process the request and then transmit the status byte. If your program does not wait for a received character, you may receive erroneous results.

ESC A and GS S are functionally identical. ESC A is provided for compatibility with the LabelWriter EL bitmap label printer. If possible, you should use GS S in order to ensure future compatibility.

EXPRESSION

ASCII	GS	S
Decimal	29	83
Hex	1D	53

PARAMETERS

None

RETURNS

Bit	Bit = 0	Bit = 1
0 LSB	Printer Ready	Printer Not Ready
1	Not Top of Form	Top of Form
2	RESERVED	RESERVED
3	RESERVED	RESERVED
4	RESERVED	RESERVED
5	Paper Loaded	Out of Paper
6	RESERVED	RESERVED
7 MSB	RESERVED	RESERVED

EXAMPLE

For an example of this command's usage, see Appendix A, page 90, Example 32.

GS T Select Line Wrap/Truncate Modes

DESCRIPTION

Determines how to handle a text wrap condition. A text wrap condition occurs when text extends beyond the end of a line or a page. The default is to wrap at the end of a line and a page.

EXPRESSION

ASCII	GS	T	*n*
Decimal	29	84	*n*
Hex	1D	54	*n*

PARAMETERS

n = 0 truncate in both directions
n = 1 wrap at end of line, but not end of page
n = 2 wrap at end of page, but not end of line
n = 3 wrap at end of line and end of page

EXAMPLE

For an example of this command's usage, see Appendix A, page 90, Example 33.

For an example of this command using the Caret feature see page 100, Example 33

GS V Set Print Orientation

DESCRIPTION

Causes the LabelWriter to print the data stored in the print buffer and then change to the selected orientation.

SEE ALSO

GS t

EXPRESSION

ASCII	GS	V	*n*
Decimal	29	86	*n*
Hex	1D	56	*n*

PARAMETERS

n = Specifies the orientation and speed/resolution

n = 0	Portrait	203x203	High Speed
n = 1	Landscape	203x203	High Speed
n = 2	Landscape	203x138	High Speed
n = 4	Landscape	203x203	High Resolution
n = 6	Landscape	203x138	High Resolution

EXAMPLE

For an example of this command's usage, see Appendix A, page 91, Example 34.

For an example of this command using the Caret feature see page 100, Example 34

GS W Set Bar Code Element Width

DESCRIPTION

Selects the horizontal size of a bar code element. The "Thin" parameter represents the thickness of the thin bars (in dots). The "Thick" parameter represents the thickness of the thick bars (in dots). Each dot measures .0049 inches in 203 dpi and .0073 inches in 138 dpi.

In Code 3 of 9, Interleaved 2 of 5, and Codabar, the thick bar width is set according to the "Thick" parameter, however, all other symbologies ignore the "Thick" parameter. The "Thin" parameter is used by all symbologies.

EXPRESSION

ASCII	GS	W	*Thin*	*Thick*
Decimal	29	87	*Thin*	*Thick*
Hex	1D	57	*Thin*	*Thick*

PARAMETERS

Thin = thickness of thin bars
Thick = thickness of thick bars

EXAMPLE

For an example of this command's usage, see Appendix A, page 91, Example 35.

For an example of this command using the Caret feature see page 100, Example.35.

GS d — Feed *n* Text Lines

DESCRIPTION

Prints the contents of the buffer and feeds *n* number of text lines. This command has the same effect as linefeeds.

SEE ALSO

ESC J

EXPRESSION

ASCII	GS	d	*n*
Decimal	29	100	*n*
Hex	1D	64	*n*

PARAMETERS

n = the desired distance (in text lines) to advance the print head

EXAMPLE

For an example of this command's usage, see Appendix A, page 91, Example 36.

For an example of this command using the Caret feature see page 101, Example 36.

GS h Set Bar Code Height

DESCRIPTION

Defines the height of the bars (in dots) for bar codes. The height is defined in *n*/203 inch increments. For example, specify 203 as the value for *n* to print a 1-inch high bar code. The bar code height is always rounded up to the next multiple of 8.

EXPRESSION

ASCII	GS	h	*n*
Decimal	29	104	*n*
Hex	1D	68	*n*

PARAMETERS

n = the desired height (in dot lines) of the bar code

EXAMPLE

For an example of this command's usage, see Appendix A, page 91, Example 37.

For an example of this command using the Caret feature see page 101, Example 37.

GS k Print Bar Code

DESCRIPTION

Prints a bar code at the current position in the current orientation. The *n* parameter selects the symbology to be printed. (See the table below.) The *m* parameter specifies how many characters are to be encoded as part of the bar code. If the number of characters to be encoded is variable, the *m* parameters can be set to zero. This will cause the printer to read the next character sent as a delimiter character. Further characters will then be encoded into the bar code until a character is found that matches the start character.

EXPRESSION

ASCII	GS	k	*n*	*m*	*d1…dm*
Decimal	29	107	*n*	*m*	*d1…dm*
Hex	1D	6B	*n*	*m*	*d1…dm*

PARAMETERS

n = Selects the bar code symbology to be used
m = Specifies the number of characters to be encoded. Also specifies which EAN/UPC symbology will be used.
d1..dm = The data characters to be encoded.

For an example of this command using the Caret feature see page 101, Example 37.

Character Value	Bar Code Selected	
n = 0	POSTNET	
n = 1	reserved	
n = 2	EAN/UPC Auto	
	m = 6	UPC - E
	m = 7	EAN-8
	m = 8	invalid
	m = 9	UPC-E + 2
	m = 10	UPC Auto (UPC-E/UPC-A)
	m = 11	UPC-A
	m = 12	UPC-E + 5, EAN-13
	m = 13	UPC-Auto + 2
	m = 14	UPC-A + 2
	m = 15	EAN-13 + 2
	m = 16	UPC-Auto + 5
	m = 17	UPC-A + 5
	m = 18	EAN-13 + 5
n = 3	reserved	
n = 4	Code 3 of 9	
n = 5	MSI Plessey	
n = 6	Codabar	
n = 7	Interleaved 2 of 5	
n = 8	Code 128-A	
n = 9	Code 128-B	
n = 10	Code 128-C	
n = 11	Code 128-Auto	
n = 12	reserved	
n = 13	reserved	
n = 14	reserved	
n = 15	reserved	

EXAMPLE

For an example of this command's usage, see Appendix A, page 92, Example 38.

GS l Draw Line in Landscape Mode

DESCRIPTION

Draws a line in landscape mode. The thickness of the line is determined by the bit set by the bitmask, *m*.

EXPRESSION

ASCII	GS	l	*n1*	*n2*	*L1*	*L2*	*m*
Decimal	29	108	*n1*	*n2*	*L1*	*L2*	*m*
Hex	1D	6C	*n1*	*n2*	*L1*	*L2*	*m*

PARAMETERS

n1 = most significant byte of the offset from the left (in dots)
n2 = least significant byte of the offset from the left (in dots)
L1 = most significant byte of the line length (in dots)
L2 = least significant byte of the line length (in dots)
where:

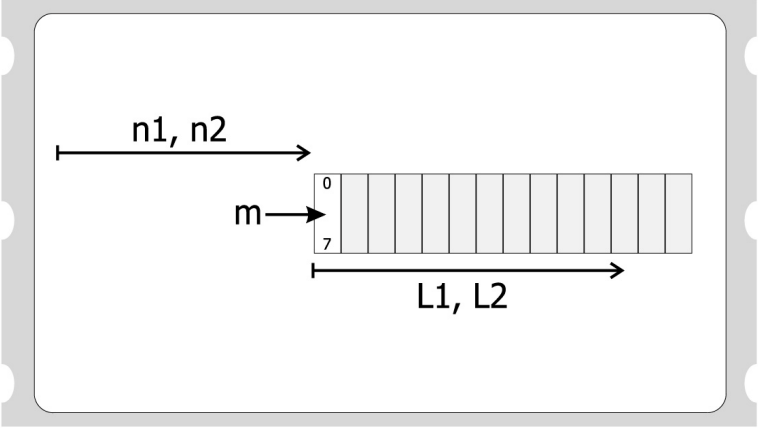
offset = inches/203 = (*n1* * 256) + *n2*
length = inches/203 = (*L1* * 256) + *L2*

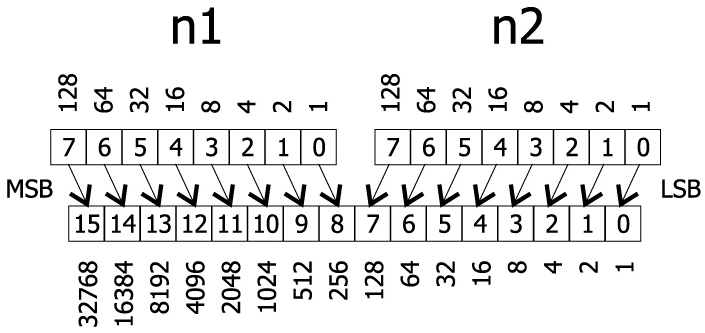
m = the bitmask (where 0 = top and 7 = bottom)

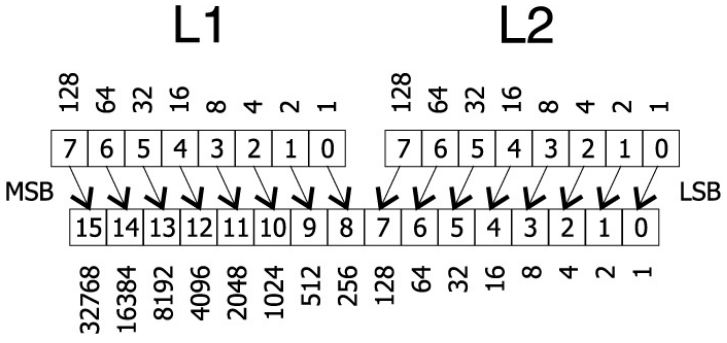
EXAMPLE

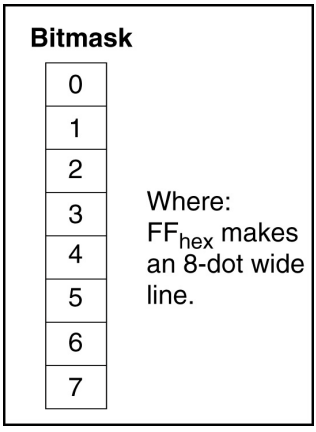
For an example of this command's usage, see Appendix A, page 92, Example 39.

For an example of this command using the Caret feature see page 101, Example 39.




n1
n2
128 64 32 16 8 4 2 1
7 6 5 4 3 2 1 0
MSB
LSB
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
32768 16384 8192 4096 2048 1024 512 256 128 64 32 16 8 4 2 1


L1
L2
128 64 32 16 8 4 2 1
7 6 5 4 3 2 1 0
MSB
LSB
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
32768 16384 8192 4096 2048 1024 512 256 128 64 32 16 8 4 2 1


Bitmask
0
1
2
3
4
5
6
7
Where:
FF$_{hex}$ makes an 8-dot wide line.

GS q Print UPC/EAN Checksum

DESCRIPTION

Prints the checksum digit for the specified bar code. The checksum digit is printed in the current font, at the current text position. Currently the only supported symbologies are the UPC/EAN bar codes.

EXPRESSION

ASCII	GS	q	*n*	*m*	*d1…dm*
Decimal	29	113	*n*	*m*	*d1…dm*
Hex	1D	71	*n*	*m*	*d1…dm*

PARAMETERS

n = selects the bar code symbology to be used
m = specifies the number of characters to be encoded
d1...dm = the data characters to be encoded

EXAMPLE

For an example of this command's usage, see Appendix A, page 92, Example 40.

For an example of this command using the Caret feature see page 102, Example 40.

GS t Set Characters per Line in Landscape

DESCRIPTION

Creates an internal memory buffer to store landscape text and bar codes until a form feed is received. The size of the buffer is determined by *n*, the number of characters per line. The *n* parameter is converted internally to millimeters so new line lengths can be automatically calculated in the event a font change takes place. The conversion to millimeters is done by multiplying the value of *n* by the width of whatever font is currently set when the GS t command is sent.

This command may be used in conjunction with the GS T command to determine where, if at all, text wraps to the next line.

This command is similar to the GS u command.

SEE ALSO

GS u
GS T

EXPRESSION

ASCII	GS	t	*n*
Decimal	29	116	*n*
Hex	1D	74	*n*

PARAMETERS

n = the desired number of characters per line in landscape mode

EXAMPLE

For an example of this command's usage, see Appendix A, page 92, Example 41.

For an example of this command using the Caret feature see page 102, Example 41.

GS u Set Characters per Line in Portrait

DESCRIPTION

Creates an internal memory buffer to store portrait text and bar codes. The size of the buffer is determined by *n*, the number of characters per line. The *n* parameter is converted internally to millimeters so new line lengths can be automatically calculated in the event a font change takes place. The conversion to millimeters is done by multiplying the value of *n* by the width of whatever font is currently set when the GS u command is sent.

This command may be used in conjunction with the GS T command to determine where, if at all, text wraps to the next line.

This command is similar to the GS t command.

SEE ALSO

GS t
GS T

EXPRESSION

ASCII	GS	u	*n*
Decimal	29	117	*n*
Hex	1D	75	*n*

PARAMETERS

n = the desired number of characters per line in portrait mode

EXAMPLE

For an example of this command's usage, see Appendix A, page 93, Example 42.

For an example of this command using the Caret feature see page 102, Example 42.

GS w Set Bar Code Module Width

DESCRIPTION

Selects the horizontal size of a bar code module. The parameter *n* represents the thickness of the thin bars (in dots). Each dot measures .0049 inches in 203 dpi and .0073 inches in 138 dpi. With Code 3 of 9, Interleaved 2 of 5, and Codabar, the thick bars will be automatically adjusted to 2 * *n*.

EXPRESSION

ASCII	GS	w	*n*
Decimal	29	119	*n*
Hex	1D	77	*n*

PARAMETERS

n = the desired horizontal size (in dots) of thin bar codes; with Code 3 of 9, Interleaved 2 of 5, and Codabar, thick bar codes = 2 * *n*

EXAMPLE

For an example of this command's usage, see Appendix A, page 93, Example 43.

For an example of this command using the Caret feature see page 102, Example 43.

GS x Print MaxiCode Bar Code

DESCRIPTION

As the standards for MaxiCode are subject to change contact Dymo-CoStar for information regarding the implementation of MaxiCode bar codes.

EXPRESSION

ASCII	GS	x
Decimal	29	120
Hex	1D	78

PARAMETERS

EXAMPLE

Contact Dymo-CoStar Corporation for an example of the code required to generate a MaxiCode bar code.

GS ~ Enter Debug Mode

DESCRIPTION

Prints the received printer codes either as a Hex or ASCII dump. This allows you to debug print problems. The debug mode remains in effect until the printer is powered off.

EXPRESSION

ASCII	GS	~	*n*
Decimal	29	126	*n*
Hex	1D	7E	*n*

PARAMETERS

n = "a"	ASCII dump of received characters
n = "h"	Hex dump of received characters

The Caret Feature

Some environments do not allow the user to send the full range of ASCII characters. The Caret feature is used to resolve difficulties that may arise because of this.

Activating the Caret Feature

The Caret feature defaults to off on the LabelWriter's. To enable the Caret feature, set the printer into terminal mode as instructed in Appendix C and send a carriage return/line feed followed by the characters ‘C’ and ‘1’. The program below demonstrates this.

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(13); CHR$(10);
PRINT #1, "C1";
```

Using the Caret Feature

When the caret feature is enabled, a LabelWriter will translate any 3 digit characters following a caret character (‘^’) as the number they express. For example, if the characters ^027 are sent to the LabelWriter, it will interpret them as a single character with a value of 27 (the Escape character).

When using the caret feature, three digit characters must always follow the caret (^). Also, while the caret feature is enabled, the LabelWriter will not work correctly with the LabelWriter EL Windows or Macintosh print drivers.

Appendix A
Command Examples

Code Examples

Below are examples of code written in BASIC showing how many of the LabelWriter commands are used.

HT Horizontal Tab Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, “Total”; CHR$(9); “1.99”;CHR$(10);
PRINT #1, CHR$(12);
```

Example 1: HT Horizontal Tab

LF Line Feed Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, “Line 1”; CHR$(10);
PRINT #1, CHR$(10); CHR$(10);
PRINT #1, “Line 4”; CHR$(10);
PRINT #1, CHR$(12);
```

Example 2: LF Line Feed

FF Form Feed Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); “L”; CHR$(1); CHR$(150);
PRINT #1, “Feed Length = 2 inches”; CHR$(10);
PRINT #1, CHR$(12);
```

Example 3: FF Form Feed

CR Carriage Return Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "Line of Text"; CHR$(13);
PRINT #1, CHR$(12);
```

Example 4: CR Carriage Return

SO Set Font to Double Wide Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "Normal ";
PRINT #1, CHR$(14);
PRINT #1, "Wide";
PRINT #1, CHR$(20);
PRINT #1, "Normal"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 5: SO Set Font to Double Wide

DC4 Cancel Double Wide Mode Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "Normal ";
PRINT #1, CHR$(14);
PRINT #1, "Wide";
PRINT #1, CHR$(20);
PRINT #1, "Normal"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 6: DC4 Cancel Double Wide Mode

SYN EL Mode Graphics Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "B"; CHR$(10);
PRINT #1, CHR$(27); "D"; CHR$(12);
FOR I = 1 TO 100
PRINT #1, CHR$(22);
FOR J = 1 to 12
PRINT #1, CHR$(85);
NEXT J
NEXT I
PRINT #1, CHR$(12);
```

Example 7: SYN EL Mode Graphics

ETB EL Mode Compressed Graphics Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "B"; CHR$(10);
PRINT #1, CHR$(27); "D"; CHR$(12);
FOR I = 1 TO 100
PRINT #1, CHR$(23);
PRINT #1, CHR$(95);
NEXT I
PRINT #1, CHR$(12);
```

Example 8: ETB EL Mode Compressed Graphics

20h - FFh Printable Characters Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "Print a trademark ";CHR$(153);
PRINT #1, "Print a copyright ";CHR$(169);
PRINT #1, "Print a Register  ";CHR$(174);
PRINT #1, "Print a Degree    ";CHR$(176);
FOR I = 32 TO 127
PRINT #1, CHR$(I);
NEXT I
PRINT #1, CHR$(12);
```

Example 9: 20h - FFh Printable Characters

ESC * Reset to Defaults Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "The printer is reset twice"; CHR$(10);
PRINT #1, CHR$(12);
PRINT #1, CHR$(27); "@"
```

Example 10: ESC * Reset to Defaults

ESC @ Reset to Power-up Condition Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "The printer is reset twice"; CHR$(10);
PRINT #1, CHR$(12);
PRINT #1, CHR$(27); "@"
```

Example 11: ESC @ Reset to Power-up Condition

ESC B Set Dot Tab Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "B"; CHR$(10);
PRINT #1, CHR$(27); "D"; CHR$(12);
FOR I = 1 TO 100
PRINT #1, CHR$(23);
PRINT #1, CHR$(95);
NEXT I
PRINT #1, CHR$(12);
```

Example 12: ESC B Set Dot Tab

ESC D Set Bytes per Line Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "B"; CHR$(10);
PRINT #1, CHR$(27); "D"; CHR$(12);
FOR I = 1 TO 100
PRINT #1, CHR$(23);
PRINT #1, CHR$(95);
NEXT I
PRINT #1, CHR$(12);
```

Example 13: ESC D Set Bytes per Line

ESC E Form Feed Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "ESC E Ejects a Label"; CHR$(10);
PRINT #1, CHR$(27); "E";
```

Example 14: ESC E Form Feed

ESC J Feed *n* Sublines Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27);"*";
PRINT #1, "First Line"; CHR$(10);
PRINT #1, CHR$(27); "J"; CHR$(203);
PRINT #1, "One inch below First Line"
PRINT #1, CHR$(12);
```

Example 15: ESC J Feed *n* Sublines

ESC M Set Font to 12 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "M"; "12 cpi"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 16: ESC M Set Font to 12 cpi

ESC P Set Font to 16 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "P"; "16 cpi"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 17: ESC P Set Font to 16 cpi

ESC S Set Font to 20 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "S"; "20 cpi"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 18: ESC S Set Font to 20 cpi

ESC T Set Font to 7 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "T"; "7 cpi"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 19: ESC T Set Font to 7 cpi

ESC U Set Font to 10 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "U"; "10 cpi"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 20: ESC U Set Font to 10 cpi

ESC V Return Firmware Revision Example

```
See sample code provided on the disk.
```

Example 21: ESC V Return Firmware Revision

ESC W Wrap Data Example

```
See sample code provided on the disk.
```

Example 22: ESC W Wrap Data

ESC X Set Horizontal Starting Position Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); "t"; CHR$(30);
PRINT #1, CHR$(29); "V1";
PRINT #1, "True Left Margin"; CHR$(10)
PRINT #1, CHR$(27); "X"; CHR$(1); CHR$(150);
PRINT #1, "2 Inch Indent"; CHR$(10);
PRINT #1, CHR$(27); "X"; CHR$(0); CHR$(203);
PRINT #1, "1 Inch Indent"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 23: ESC X Set Horizontal Starting Position

ESC Y Set Vertical Starting Position Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); "t"; CHR$(30);
PRINT #1, CHR$(29); "V1";
PRINT #1, "True Top Margin"; CHR$(10);
PRINT #1, CHR$(27); "Y"; CHR$(20);
PRINT #1, "20 millimeters from the top"; CHR$(10);
PRINT #1, CHR$(27); "Y"; CHR$(10);
PRINT #1, "10 millimeters from the top"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 24: ESC Y Set Vertical Starting Position

GS DC2 Set Font to Double Height Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "T";
PRINT #1, CHR$(29); CHR$(18);
PRINT #1, "This line is Double Height"; CHR$(10);
PRINT #1, CHR$(29); CHR$(19);
PRINT #1, "This line is Normal Height"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 25: GS DC2 Set Font to Double Height

GS DC3 Cancel Double Height Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(27); "T";
PRINT #1, CHR$(29); CHR$(18);
PRINT #1, "This line is Double Height"; CHR$(10);
PRINT #1, CHR$(29); CHR$(19);
PRINT #1, "This line is Normal Height"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 26: GS DC3 Cancel Double Height

GS RS Set Inverse Print Mode Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "Normal";
PRINT #1, CHR$(29); CHR$(30);
PRINT #1, "Inverse"
PRINT #1, CHR$(29); CHR$(31);
PRINT #1, "Normal"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 27: GS RS Set Inverse Print Mode

GS US Cancel Inverse Print Mode Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "Normal";
PRINT #1, CHR$(29); CHR$(30);
PRINT #1, "Inverse"
PRINT #1, CHR$(29); CHR$(31);
PRINT #1, "Normal"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 28: GS US Cancel Inverse Print Mode

GS * Landscape Mode Graphics Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(29);"*";
PRINT #1, CHR$(1); CHR$(1);
PRINT #1, CHR$(3); CHR$(10); CHR$(10);
FOR I = 1 to 100
PRINT #1, CHR$(I);
NEXT I
```

Example 29: GS * Landscape Mode Graphics

GS A Starting Position of Bar Code Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); "A"; CHR$(0); CHR$(203);
PRINT #1, CHR$(29); "h"; CHR$(203);
PRINT #1, CHR$(29); "W"; CHR$(3); CHR$(5);
PRINT #1, CHR$(29); "k"; CHR$(4); CHR$(6);
PRINT #1, "DYMO";
PRINT #1, CHR$(12);
```

Example 30: GS A Starting Position of Bar Code

GS L Set Feed Length Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27);"*";
PRINT #1, CHR$(29); "t"; CHR$(36);
PRINT #1, CHR$(29); "V1";
PRINT #1, "This is Line One"; CHR$(10);
PRINT #1, "This is Line Two"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 31: GS L Set Feed Length

GS S Return Printer Status Example

```
See sample code provided on disk
```

Example 32: GS S Return Printer Status

GS T Select Line Wrap/Truncate Modes Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); "T"; CHR$(3);
PRINT #1, CHR$(29); "u"; CHR$(14);
PRINT #1, "This is Line 1 This is Line 2";CHR$(10)
PRINT #1, CHR$(12);
```

Example 33: GS T Select Line Wrap/Truncate Modes

GS V Set Print Orientation Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); "t"; CHR$(11);
PRINT #1, CHR$(29); "V1";
PRINT #1, "This is in"; CHR$(10);
PRINT #1, "203 x 203"; CHR$(10);
PRINT #1, "Landscape"; CHR$(10);
PRINT #1, "Mode"; CHR$(10);
PRINT #1, CHR$(29);"V0";
PRINT #1, "This is in"; CHR$(10);
PRINT #1, "Portrait Mode"; CHR$(10);
PRINT #1, CHR$(29); "t"; CHR$(11);
PRINT #1, CHR$(29); "V2";
PRINT #1, "This is in"; CHR$(10);
PRINT #1, "138 x 203"; CHR$(10);
PRINT #1, "Landscape";CHR$(10);
PRINT #1, "Mode"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 34: GS V Set Print Orientation

GS W Set Bar Code Element Width Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(29); "A"; CHR$(0); CHR$(203);
PRINT #1, CHR$(29); "h"; CHR$(203);
PRINT #1, CHR$(29); "W"; CHR$(3); CHR$(5);
PRINT #1, CHR$(29); "k"; CHR$(4); CHR$(6);
PRINT #1, "DYMO";
PRINT #1, "DYMO"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 35: GS W Set Bar Code Element Width

GS d Feed *n* Text Lines Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, "This is Line 1"; CHR$(10);
PRINT #1, CHR$(29); "d"; CHR$(4);
PRINT #1, "This is Line 6"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 36: GS d Feed *n* Text Lines

GS h Set Bar Code Height Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(29); "A"; CHR$(0); CHR$(203);
PRINT #1, CHR$(29); "h"; CHR$(203);
PRINT #1, CHR$(29); "W"; CHR$(3); CHR$(5);
PRINT #1, CHR$(29); "k"; CHR$(4); CHR$(6);
PRINT #1, "DYMO";
PRINT #1, "DYMO"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 37: GS h Set Bar Code Height

GS k Print Bar Code Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); "t"; CHR$(30);
PRINT #1, CHR$(29); "V1";
PRINT #1, CHR$(29); "h"; CHR$(101);
PRINT #1, CHR$(29); "k"; CHR$(11); CHR$(0);
PRINT #1, "*01234567890*";
PRINT #1, "01234567890"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 38: GS k Print Bar Code

GS l Draw Line in Landscape Mode Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); "t"; CHR$(30);
PRINT #1, CHR$(29); "V1";
PRINT #1, CHR$(29); CHR$(108); CHR$(0); CHR$(203);
PRINT #1, CHR$(0); CHR$(203); CHR$(7);
PRINT #1, CHR$(12);
```

The above example prints a line that is 3-dots wide, 1-inch long, located 1 inch from the left.

Example 39: GS l Draw Line in Landscape Mode

GS q Print UPC/EAN Checksum Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27); "*";
PRINT #1, CHR$(29); "t"; CHR$(37);
PRINT #1, CHR$(29); "V4";
PRINT #1, CHR$(29); "h"; CHR$(101);
PRINT #1, CHR$(29); "k"; CHR$(2); CHR$(11);
PRINT #1, "01234567890";
PRINT #1, "01234567890";
PRINT #1, CHR$(29); "q"; CHR$(2); CHR$(11);
PRINT #1, "01234567890";
PRINT #1, CHR$(12);
```

Example 40: GS q Print UPC/EAN Checksum

GS t Set Characters per Line in Landscape Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(27);"*";
PRINT #1, CHR$(29); "t"; CHR$(30);
PRINT #1, CHR$(29); "V1";
PRINT #1, "This is Line One"; CHR$(10);
PRINT #1, "This is Line Two"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 41: GS t Set Characters per Line in Landscape

GS u Set Characters per Line in Portrait Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(29); "T"; CHR$(3);
PRINT #1, CHR$(29); "u"; CHR$(15);
PRINT #1, "This is Line One This is Line 2";
```

Example 42: GS u Set Characters per Line in Portrait

GS w Set Bar Code Module Width Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, CHR$(29); "A"; CHR$(0); CHR$(203);
PRINT #1, CHR$(29); "h"; CHR$(203);
PRINT #1, CHR$(29); "w"; CHR$(3); CHR$(5);
PRINT #1, CHR$(29); "k"; CHR$(4); CHR$(6);
PRINT #1, "DYMO";
PRINT #1, "DYMO"; CHR$(10);
PRINT #1, CHR$(12);
```

Example 43: GS w Set Bar Code Module Width

Caret Feature Code Examples

Below are examples of code written in BASIC (Using the caret feature) showing how many of the LabelWriter commands are used.

HT Horizontal Tab Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*Total^0091.99^010^012”;
```

Example 1: HT Horizontal Tab

LF Line Feed Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*Line 1^010^010^010Line 4^010^012”;
```

Example 2: LF Line Feed

FF Form Feed Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^029L^001^150Feed Length"
PRINT #1, “ = 2 inches^010^012”;
```

Example 3: FF Form Feed

CR Carriage Return Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*Line of Text^013^012”;
```

Example 4: CR Carriage Return

SO Set Font to Double Wide Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*Normal ^014Wide^020Normal^010^012”;
```

Example 5: SO Set Font to Double Wide

DC4 Cancel Double Wide Mode Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*Normal ^014Wide^020Normal^010^012”;
```

Example 6: DC4 Cancel Double Wide Mode

SYN EL Mode Graphics Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “027*^027B^010^027D^012”;
FOR I = 1 TO 100
PRINT #1, “^022”;
FOR J = 1 to 12
PRINT #1, “^085”;
NEXT J
NEXT I
PRINT #1, “^012”;
```

Example 7: SYN EL Mode Graphics

ETB EL Mode Compressed Graphics Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027B^010^027D^012”;
FOR I = 1 TO 100
PRINT #1, “^023^095”;
NEXT I
PRINT #1, “^012”;
```

Example 8: ETB EL Mode Compressed Graphics

20h - FFh Printable Characters Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*";
FOR I = 32 TO 127
PRINT #1, CHR$(I); " ";
NEXT I
PRINT #1, "^010";
PRINT #1, "Print a trademark ^153”
PRINT #1, "Print a copyright ^169”
PRINT #1, "Print a Register  ^174”
PRINT #1, "Print a Degree    ^176”
PRINT #1, “^012”;
```

Example 9: 20h - FFh Printable Characters

ESC * Reset to Defaults Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*The printer is reset twice^010^012^027@"
```

Example 10: ESC * Reset to Defaults

ESC @ Reset to Power-up Condition Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*The printer is reset twice^010^012^027@"
```

Example 11: ESC @ Reset to Power-up Condition

ESC B Set Dot Tab Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027B^010^027D^012”;
FOR I = 1 TO 100
PRINT #1, “^023^095”;
NEXT I
PRINT #1, “^012”;
```

Example 12: ESC B Set Dot Tab

ESC D Set Bytes per Line Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027B^010^027D^012”;
FOR I = 1 TO 100
PRINT #1, “^023^095”;
NEXT I
PRINT #1, “^012”;
```

Example 13: ESC D Set Bytes per Line

ESC E Form Feed Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*ESC E Ejects a Label^010^027E";
```

Example 14: ESC E Form Feed

ESC J Feed *n* Sublines Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*First Line^010^027J^203One inch";
PRINT #1, “ below First Line^012”;
```

Example 15: ESC J Feed *n* Sublines

ESC M Set Font to 12 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027M12 cpi ^010^012”;
```

Example 16: ESC M Set Font to 12 cpi

ESC P Set Font to 16 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027P16 cpi^010^012”;
```

Example 17: ESC P Set Font to 16 cpi

ESC S Set Font to 20 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027S20 cpi^010^012”;
```

Example 18: ESC S Set Font to 20 cpi

ESC T Set Font to 7 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027T7 cpi^010^012”;
```

Example 19: ESC T Set Font to 7 cpi

ESC U Set Font to 10 cpi Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027U10 cpi^010^012”;
```

Example 20: ESC U Set Font to 10 cpi

ESC X Set Horizontal Starting Position Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^029t^030^029V1";
PRINT #1, “True Left Margin^010";
PRINT #1, “^027X^001^150";
PRINT #1, “2 inch ";
PRINT #1, “Indent^010";
PRINT #1, “^027X^000^203";
PRINT #1, “1 inch Indent";
PRINT #1, “^010^012”;
```

Example 23: ESC X Set Horizontal Starting Position

ESC Y Set Vertical Starting Position Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^029t^030^029V1";
PRINT #1, “True Top Margin^010";
PRINT #1, “^027Y^020";
PRINT #1, “20 millimeters from the top^010";
PRINT #1, “^027Y^010";
PRINT #1, “10 millimeters from the top^010";
PRINT #1, “^012”;
```

Example 24: ESC Y Set Vertical Starting Position

GS DC2 Set Font to Double Height Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027T^029^018";
PRINT #1, “This line is Double Height^010";
PRINT #1, “^029^019";
PRINT #1, “This line is Normal Height^010";
PRINT #1, “^012”;
```

Example 25: GS DC2 Set Font to Double Height

GS DC3 Cancel Double Height Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^027T^029^018";
PRINT #1, “This line is Double Height^010";
PRINT #1, “^029^019";
PRINT #1, “This line is Normal Height^010";
PRINT #1, “^012”;
```

Example 26: GS DC3 Cancel Double Height

GS RS Set Inverse Print Mode Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*Normal ";
PRINT #1, “^029^030Inverse^029^031 ";
PRINT #1, “Normal^010";
PRINT #1, “^012”;
```

Example 27: GS RS Set Inverse Print Mode

GS US Cancel Inverse Print Mode Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*Normal ";
PRINT #1, “^029^030Inverse^029^031 ";
PRINT #1, “Normal^010";
PRINT #1, “^012”;
```

Example 28: GS US Cancel Inverse Print Mode

GS * Landscape Mode Graphics Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^029t^040^029V1";
PRINT #1, “^029*^001^001^003^010^010”;
FOR I = 1 to 100
PRINT #1, CHR$(I);
NEXT I
PRINT #1, "^012";
```

Example 29: GS * Landscape Mode Graphics

GS A Starting Position of Bar Code Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*";
PRINT #1, “^029A^000^203";
PRINT #1, “^029h^203^029W^003^005";
PRINT #1, “^029k^004^006DYMO";
PRINT #1, “^012”;
```

Example 30: GS A Starting Position of Bar Code

GS L Set Feed Length Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*";
PRINT #1, “^029t^036^029V^001";
PRINT #1, “This is Line One^010";
PRINT #1, “This is Line Two^010";
PRINT #1, “^012”;
```

Example 31: GS L Set Feed Length

GS T Select Line Wrap/Truncate Modes Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*";
PRINT #1, “^029T^003^029u^014";
PRINT #1, “This is Line 1 This is Line 2^010";
PRINT #1, “^012”;
```

Example 33: GS T Select Line Wrap/Truncate Modes

GS V Set Print Orientation Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, “^027";
PRINT #1, “*^029t^011^029V^001";
PRINT #1, “This is in^010";
PRINT #1, “203 x 203^010Landscape^010Mode^010";
PRINT #1, “^029V^000This is in^010Portrait Mode^010";
PRINT #1, “^029t^011^029V^002";
PRINT #1, “This is in^010138 x 203";
PRINT #1, “^010Landscape^010Mode^010";
PRINT #1, “^012”;
```

Example 34: GS V Set Print Orientation

GS W Set Bar Code Element Width Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^029A^000^203";
PRINT #1, “^029h^203^029W^003^005";
PRINT #1, “^029k^004^006DYMODYMO^010";
PRINT #1, “^012”;
```

Example 35: GS W Set Bar Code Element Width

GS d Feed *n* Text Lines Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*This is Line 1^010";
PRINT #1, “^029d^004This is Line 6^010";
PRINT #1, “^012”;
```

Example 36: GS d Feed *n* Text Lines

GS h Set Bar Code Height Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^029A^000^203";
PRINT #1, “^029h^203";
PRINT #1, “^029W^003^005";
PRINT #1, “^029k^004^006DYMODYMO^010";
PRINT #1, “^012”;
```

Example 37: GS h Set Bar Code Height

GS k Print Bar Code Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^029t^030^029V1";
PRINT #1, “^029h^101^";
PRINT #1, “029k^011^000*01234567890*01234567890";
PRINT #1, “^012”;
```

Example 38: GS k Print Bar Code

GS l Draw Line in Landscape Mode Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^029t^030^029V^001";
PRINT #1, “^029^108^000^203^000^203^007";
PRINT #1, “^012";
```

The above example prints a line that is 3-dots wide, 1-inch long, located 1 inch from the left.

Example 39: GS l Draw Line in Landscape Mode

GS q Print UPC/EAN Checksum Example

```
OPEN "COM1:9600,n,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^029t^037^029V^004";
PRINT #1, “^029h^101^029k^002^011";
PRINT #1, “01234567890";
PRINT #1, “01234567890^029q^002^011";
PRINT #1, “01234567890";
PRINT #1, “^012";
```

Example 40: GS q Print UPC/EAN Checksum

GS t Set Characters per Line in Landscape Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^027*^029t^017^029V1";
PRINT #1, "This is Line One This is Line Two^010^012";
```

Example 41: GS t Set Characters per Line in Landscape

GS u Set Characters per Line in Portrait Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^029T^003”;
PRINT #1, “^029u^017This is Line One This is Line 2";
```

Example 42: GS u Set Characters per Line in Portrait

GS w Set Bar Code Module Width Example

```
OPEN "COM1:9600,N,8,1" FOR OUTPUT AS #1
PRINT #1, “^029A^000^203”;
PRINT #1, “^029h^203”;
PRINT #1, “^029w^003^005”;
PRINT #1, “^029k^004^006”;
PRINT #1, "DYMO";
PRINT #1, "DYMO^010^012”;
```

Example 43: GS w Set Bar Code Module Width

Source Code Examples

Included in this CD are demo programs and sample source code. The source code is provided in both the BASIC and C programming languages.

It is recommended that you print out the source code and study it. Examples of how to create the most common labels are provided for your convenience.

The README.TXT file, located on the CD, lists and explains all the files on the diskette. You should also print out and read this file.

Also, visit our web site, www.dymo.com/developers, for more up-to-date information and examples.

Appendix B
Troubleshooting

The LabelWriter SE300 printer was designed to give long and trouble-free service, requiring very little maintenance. You'll get the best possible performance from your LabelWriter if you follow the instructions in Chapter 1 and the procedures described here. This appendix also covers troubleshooting for printer errors and other common problems.

Printer Maintenance

Printer maintenance is quick and easy with the LabelWriter printer. There's no set schedule for maintenance; simply perform the appropriate maintenance when you see that it's needed.

The LabelWriter printer can be easily cleaned using just a few simple items. Use these items as often as needed to keep your printer clean and in good working order. You'll need these items:

- lint-free cloth
- isopropyl alcohol, diluted dishwashing detergent, or diluted (non-ammonia) glass cleaner
- small, soft brush, such as a paint brush

Use these items as they are called for in the maintenance procedures described in this chapter.

Exterior Maintenance

Cleaning the outside of your LabelWriter is as important as cleaning the inside. Occasionally dusting the outside of the printer will reduce the incidence of foreign matter getting inside the printer. Follow these steps to perform exterior maintenance on your printer:

1. Turn the printer off and disconnect the power cord.

2. Dirt, dust, ink and so on will more than likely be attracted to the exterior of your printer. Use the lint-free cloth to wipe the exterior of the printer. Remove dirt and ink smudges with either isopropyl alcohol, diluted dishwashing detergent, or diluted glass cleaner. Avoid products containing ammonia when you clean the printer or plastic cover.
3. Take a minute to clean the work area around the LabelWriter SE300. There are probably a few labels (new and used) laying around!
4. Reconnect the power cord and turn on the printer.

Interior Maintenance

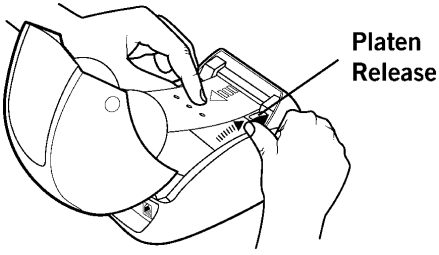
The printer's top cover will keep out most of the dust and dirt which accumulates in operating areas. However, it is still a good idea to periodically perform some basic interior maintenance.

1. Turn the printer off and disconnect the power cord.
2. Open the top cover.
3. Use a soft brush to clean inside the printer. A small, soft paint brush will whisk away paper dust and other stray particles from the inside of the printer. Remove the roll of labels to clean under the roll, and then replace the labels.
4. Close the top cover.
5. Reconnect the power cord and turn the printer on.

Clearing Label Jams

If you find labels jammed in the LabelWriter, follow these steps to remove them.

1. Tear off any labels that have been fed through the printer..
2. As you lift the platen release lever, pull the label out of the platen mechanism. See figure below..



Troubleshooting

Since the LabelWriter is extremely reliable and intuitive, there's an excellent chance you'll never have to look in this section. However, if you do find yourself in need of some type of troubleshooting advice, use this section to correct the problem.

Check the Power to the Printer

Be certain the printer is turned on. The on/off light glows green when the printer is turned on. If pressing the on/off button does not turn the printer on, check the power connection at the wall and at the LabelWriter. If the printer still will not turn on, plug another machine into the outlet to be certain the outlet is functional.

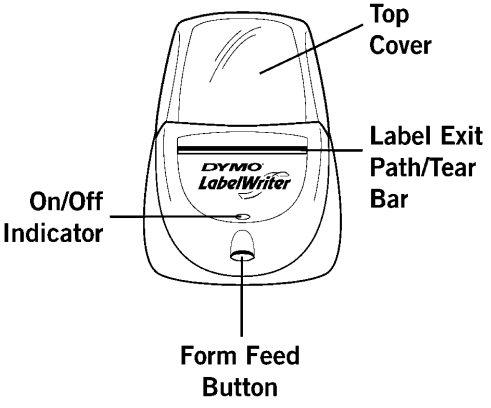
Printer Self-Test

To be certain that your LabelWriter is working (printing and feeding) properly, you can run a self-test by doing the following:

1. If a label roll is not already loaded, load a roll as described in Chapter 1. **Make sure to use 2 inch wide labels for the test.**
2. Be certain that the printer is off, the power cord is connected, and the printer cable is not connected to the printer.
3. Press the form feed button and hold it down as you turn on the LabelWriter. The LabelWriter will print a DYMO marquee bounded by 2 horizontal bars, as well as internal printer settings.
4. **End the self test by turning off the LabelWriter.**
5. Reconnect the printer cable and turn the printer back on.

Check the Labels

If the LabelWriter fails the self-test, check to see if the labels are loaded improperly or if the printer cable is plugged in (the printer cable should not be connected during the self-test). Reload the labels and retry the self-test.



- If the on/off indicator is flashing and labels are loaded, inspect the labels to look for jammed, damaged, or crimped labels. Reload the labels according to the instructions in Chapter 1.

- The on/off light will also flash when the printer comes to the end of a label roll. Load a new roll of labels and the light should stop flashing.
- If the print quality is poor, the print head might be temporarily misaligned. Unload and reload the labels, and try printing again. If this doesn't solve the problem, run a LabelWriter Cleaning Card (Dymo-CoStar part # 60601) through the print path to remove residues from the print head and rollers. Also, make sure that you are not using paper that has been exposed to sunlight for a prolonged period of time.

Check the Connections

If the self-test is successful but the LabelWriter still will not print, do the following:

- Check to be sure you have selected the correct serial port in your software. Confirm that your serial port is set to 9600 baud, no parity, 8 data bits, 1 stop bit.
- Check to see if the printer cable is properly connected. Refer to Chapter 1 and your computer's documentation if you need help.

Appendix C

Printer Configuration Menu

The LabelWriter SE300 printer has a Printer Configuration Menu built into its firmware. Through this menu, NVRAM (Non-Volatile RAM) settings such as baud rate and feed distance can be changed. NVRAM settings remain in effect even after power has been removed from the printer.

The Printer Configuration Menu is accessible by using any terminal communications (modem) program (i.e. Hyperterminal in Windows) and communicating with the LabelWriter through an RS-232 serial port. The communications software MUST be configured to operate at 9600 baud with the communications settings defined as no parity, 8 data bits, and 1 stop bit.

To access the Printer Configuration Menu, do the following:

1. Turn off the LabelWriter.
2. Press and hold down the form feed button.
3. While the form feed button is pressed, turn the printer on.
4. Continue to hold the feed button down for five more seconds. The green light will blink. Release the feed button.
5. Start your communications software. Press <Enter> until the menu appears. Press ? for help.

You should see the following on your screen:

```
Dymo LabelWriter SE300
Serial Number xxxxxxxx
Firmware Version SE300K00

Printer Configuration Menu
Type ? for help

-?
B?      Display Baud Rate
B0      Set 1200 Baud
B1      Set 9600 Baud
B2      Set 14,400 Baud
B3      Set 19,200 Baud
B4      Set 28,800 Baud
B5      Set 38,400 Baud
B6      Set 57,600 Baud
B7      Set 115,200 Baud
F?      Display Default Feed Length
Fnnn    Set default feed length
X?      Display XON/XOFF inhibit status
X0      Send XON/XOFF
X1      Inhibit XON/XOFF
C?      Display Caret (^) Status
C0      Disable Caret Command
C1      Enable Caret Command

-
```

When you are finished, turn the LabelWriter off. The next time you power up your LabelWriter, the changes you made will take effect.

Appendix D
Printer Specifications

This appendix covers hardware specifications of the LabelWriter SE300 printer.

Hardware Specifications

This section lists printer, interface, print head, and printing specifications. For additional serial interface specifications, refer to the next section in this chapter.

Model :	LabelWriter SE300
Dimensions:	Width: 4-7/8” Height: 5-3/4” Depth: 7-1/4”
Weight:	1.5 pounds
Paper Handling:	Straight. Entire path is accessible.
Maximum Duty Cycle:	Continuous print at 10% print coverage.

Interface

Type:	Bi-directional, serial RS-232 using transmit, receive, and ground
Protocol:	CTS or XON/XOFF, 9600 baud, 8 data bits, no parity, 1 start bit, 1 stop bit
Speed	2400 to 115,200 baud

Print Head

Model:	Fixed 2.25" linear thermal head

Average Life:	2 million lineal inches (over 31 miles) Print head is replaceable
Printing Method:	Direct thermal
Speed:	Approx. 2" per second
Label Width:	Maximum width of 62 mm (2.44 inches)
Resolution:	203 x 203 and 136 x 203 dots per inch
Fonts:	Five fonts (7.5 cpi, 10 cpi, 12 cpi, 16.5 cpi, and 20 cpi) and four variations (Normal, Double Height, Double Width, and Double Height/Double Width) for a total of 20 possible font variations

Bar codes:	Codabar Code 3 of 9 Code 128-A Code 128-B Code 128-C Code 128-Auto EAN-8 EAN-13 EAN-13 + 2 EAN-13 + 5 EAN/UPC Auto Interleaved 2 of 5 MSI Plessey POSTNET UPC-A UPC-A + 2 UPC-A + 5 UPC AUTO (UPC-E/UPC-A) UPC AUTO + 2 UPC AUTO + 5 UPC-E UPC-E + 2 UPC-E + 5

Serial Interface Specifications

This section describes the specifications of the serial interface. See Chapter 1 for details about connecting your printer to your computer through the serial interface.

The XON/XOFF Protocol

The RS-232 serial interface communicates using hardware and XON/XOFF flow control. Flow control helps to ensure that your computer doesn't send information to the printer faster than it can print.

The XON/XOFF protocol is a popular data communications protocol. When the printer's buffer is approximately 50 percent full, it sends the ASCII code XOFF (13 hex) to the computer to

tell it to stop sending data. When there is again room (that is, space for approximately 30 percent more characters in the buffer), the printer sends the ASCII code XON (11 hex) to the computer to tell it to resume sending data. (XON is also known as DC1; XOFF is synonymous with DC3.) If the computer doesn't stop sending data after it receives an XOFF, the data that overflows the buffer will be lost and the printer will halt and its power LED will flash.

The printer will send an XON code when it goes on-line to get things started. It will send an XOFF code to stop the computer from sending information if the input buffer is approximately 50 percent full.

Appendix E

Labels

This appendix describes the labels that are available for your LabelWriter SE300 printer.

Dymo-CoStar is constantly adding to the available inventory of labels. If you need a specific size, contact your computer dealer or Dymo-CoStar. You can obtain an updated listing of available labels, as well as information on how to obtain custom sizes, from Dymo-CoStar.

Label Description	# of labels per roll	Part #	Size W x L
Address:			
Standard White	350	30252	1-1/8" x 3-1/2"
White	260	30320	1-1/8" x 3-1/2"
White-2up	700	30253	1-1/8" x 3-1/2"
Clear	130	30254	1-1/8" x 3-1/2"
Yellow	130	30255	1-1/8" x 3-1/2"
Blue	130	30341	1-1/8" x 3-1/2"
Peach	130	30342	1-1/8" x 3-1/2"
Lavender	130	30343	1-1/8" x 3-1/2"
Large White Address	260	30321	1-4/10"x3-1/2"
Shipping:			
Standard White	220	30323	2-1/8"x4"
Large White	300	30256	2-5/16"x4"
Large White with red border	300	30344	2-5/16th"x4"
Large Clear	300	30269	2-5/16"x4"
File Folder:			
1-up White	130	30327	9/16"x3-7/16"
2-up White	260	30277	9/16"x3-7/16"
2-up White w/blue stripes	260	30275	9/16"x3-7/16"
2-up White w/red stripe	260	30276	9/16"x3-7/16"
Hanging File Tab Inserts	260	30376	9/16"x2"
Media Labels:			
White 3-1/2" Diskette	320	30324	2-1/8"x2-3/4"
White 3-1/2" Diskette	400	30258	2-18"x2-3/4"

Label Description	# of labels per roll	Part #	Size W x L
Media Labels (cont'd):			
White 3-1/2" Diskette (removable)	400	30331	2-1/8"x2-3/4"
VHS Top	150	30326	1-4/5"x3-1/10"
VHS Spine	75	30325	¾"x5-7/8"
Audio Cassette	350	30337	1.63"x3-1/2"
8mm Video	700	30339	3/8"x2-13/16"
Zip Drive (removable)	250	30370	2"x2-5/16"
Name Badge Supplies:			
White Badge Label, preprinted "Visitor" (red)	300	30364	2-5/16"x4"
White Name Badge (non-adhesive)	300	30365	2-1/4"x3-1/2"
White Name Badge (non-adhesive) preprinted "Visitor" (red)	300	30360	2-1/4"x3-1/2"
1 Day Self Exp. Security Stickers	100	30367	
Safety Pin Style Badge Holders	100	30368	
Bulldog Clip Style Badge Holders	100	30369	
Appointment/Business Cards:			
White	300	30374	2-1/2"x3-1/2"
Small Multi-Purpose Labels:			
White	750	30332	1" x 1"
White	1000	30333	1/2" x 1"
White	1000	30334	2-1/4" x 1-1/4"
White	3000	30335	1/2" x1/2"
White	500	30336	1" x 2-1/8"
Jewelry Label (barbell style)	1500	30299	
Price Tag Label (rat tail style)	400	30373	

Appendix F
Warranty and Service

One (1) Year Limited Warranty

Dymo-CoStar warrants the LabelWriter SE300 printer against defects in materials and workmanship for a period of one (1) year from the date of original retail purchase.

If Dymo-CoStar receives notice of such defects during the warranty period, Dymo-CoStar will either, at its option, repair or replace printers which prove to be defective.

Exclusions

This warranty does not cover customer abuse or accidental damage. Dymo-CoStar's sole liability is limited to supplying the parts and labor required to restore the warranted product to its normal operating conditions. This warranty is in lieu of all other warranties, express or implied, and in no event is Dymo-CoStar Corporation liable for consequential or incidental damage incurred by the user.

Service

In order to claim warranty coverage, dated proof of purchase for the LabelWriter SE300 printer is required. Contact Dymo-CoStar's technical support department at (203) 661-9700 between 9am and 5pm Eastern time. A technical support specialist will ask you to describe the problem and provide the product's serial number. Upon confirmation of the defect, the service representative will issue you a RA# (Return Authorization number). This number must be clearly written on the side of the shipping container. We will not accept any return without an RA# marked on the outside of the box. The product must be sent to us freight prepaid. Send the product to Dymo-CoStar's repair center at the following address.

Dymo-CoStar Service Center
RA#XXX-XXXX (place your RA# here)
84 Commerce Road
Stamford, CT 06902

We will repair the defects covered under warranty at no charge in approximately three working days. The original warranty on the printer stays in place – it does not restart from the repair date. Print heads replaced out of warranty come with a new 90-day warranty. Repairs not covered under warranty are billable and will only be made as authorized by you. The repaired unit will be returned to you with freight paid by Dymo-CoStar Corporation.

Out-of-Warranty Repairs

Repairs made to out-of-warranty printers are billable and will only be made after the end-user has authorized the repairs.

Appendix G
Character Codes

Below is a list showing the ASCII codes from 1 to 127. The list shows the ASCII characters and names, and the corresponding decimal, hexadecimal, and binary values.

Char	Name	Decimal	Hex	Binary
None	NUL	0	00	0000 0000
^A	SCH	1	01	0000 0001
^B	STX	2	02	0000 0010
^C	ETX	3	03	0000 0011
^D	EOT	4	04	0000 0100
^E	ENQ	5	05	0000 0101
^F	ACK	6	06	0000 0110
^G	BEL	7	07	0000 0111
^H	BS	8	08	0000 1000
^I	HT	9	09	0000 1001
^J	LF	10	0A	0000 1010
^K	VT	11	0B	0000 1011
^L	FF	12	0C	0000 1100
^M	CR	13	0D	0000 1101
^N	SO	14	0E	0000 1110
^O	SI	15	OF	0000 1111
^P	DLE	16	10	0001 0000
^Q	DC1	17	11	0001 0001
^R	DC2	18	12	0001 0010
^S	DC3	19	13	0001 0011
^T	DC4	20	14	0001 0100
^U	NAK	21	15	0001 0101
^V	SYN	22	16	0001 0110
^W	ETB	23	17	0001 0111
^X	CAN	24	18	0001 1000
^Y	EM	25	19	0001 1001
^Z	SUB	26	1A	0001 1010
^[	ESC	27	1B	0001 1011
^\	FS	28	1C	0001 1100
^]	GS	29	1D	0001 1101
^^	RS	30	1E	0001 1000
^	US	31	1F	0001 1111
Char	**Name**	**Decimal**	**Hex**	**Binary**

Space	space	32	20	0010 0000
!	exclamation pt.	33	21	0010 0001
"	quotation mark	34	22	0010 0010
#	number sign	35	23	0010 0011
$	dollar sign	36	24	0010 0100
%	percent sign	37	25	0010 0101
&	ampersand	38	26	0010 0110
‘	apostrophe	39	27	0010 0111
(	open parentheses	40	28	0010 1000
)	close parentheses	41	29	0010 1001
*	asterisk	42	2A	0010 1010
+	plus sign	43	2B	0010 1011
,	comma	44	2C	0010 1100
-	hyphen	45	2D	0010 1101
.	period	46	2E	0010 1110
/	slash	47	2F	0010 1111
0	zero	48	30	0011 0000
1	one	49	31	0011 0001
2	two	50	32	0011 0010
3	three	51	33	0011 0011
4	four	52	34	0011 0100
5	five	53	35	0011 0101
6	six	54	36	0011 0110
7	seven	55	37	0011 0111
8	eight	56	38	0011 1000
9	nine	57	39	0011 1001
:	colon	58	3A	0011 1010
;	semicolon	59	3B	0011 1011
<	less than sign	60	3C	0011 1100
=	equal sign	61	3D	0011 1101
>	greater than sign	62	3E	0011 1110
?	question mark	63	3F	0011 1111
@	at sign	64	40	0100 0000
A	capital A	65	41	0100 0001
B	capital B	66	42	0100 0010
C	capital C	67	43	0100 0011
D	capital D	68	44	0100 0100
E	capital E	69	45	0100 0101
F	capital F	70	46	0100 0110
G	capital G	71	47	0100 0111
H	capital H	72	48	0100 1000
Char	**Name**	**Decimal**	**Hex**	**Binary**
I	capital I	73	49	0100 1001

J	capital J	74	4A	0100 1010
K	capital K	75	4B	0100 1011
L	capital L	76	4C	0100 1100
M	capital M	77	4D	0100 1101
N	capital N	78	4E	0100 1110
O	capital O	79	4F	0100 1111
P	capital P	80	50	0101 0000
Q	capital Q	81	51	0101 0001
R	capital R	82	52	0101 0010
S	capital S	83	53	0101 0011
T	capital T	84	54	0101 0100
U	capital U	85	55	0101 0101
V	capital V	86	56	0101 0110
W	capital W	87	57	0101 0111
X	capital X	88	58	0101 1000
Y	capital Y	89	59	0101 1001
Z	capital Z	90	5A	0101 1010
[	open bracket	91	5B	0101 1011
\	back slash	92	5C	0101 1100
]	close bracket	93	5D	0101 1101
^	caret	94	5E	0101 1110
_	underscore	95	5F	0101 1111
`	accent grave	96	60	0110 0000
a	lowercase a	97	61	0110 0001
b	lowercase b	98	62	0110 0010
c	lowercase c	99	63	0110 0011
d	lowercase d	100	64	0110 0110
e	lowercase e	101	65	0110 0101
f	lowercase f	102	66	0110 0110
g	lowercase g	103	67	0110 0111
h	lowercase h	104	68	0110 1000
i	lowercase i	105	69	0110 1001
j	lowercase j	106	6A	0110 1010
k	lowercase k	107	6B	0110 1011
l	lowercase l	108	6C	0110 1100
m	lowercase m	109	6D	0110 1101
n	lowercase n	110	6E	0110 1110
o	lowercase o	111	6F	0110 1111
p	lowercase p	112	70	0111 0000
q	lowercase q	113	71	0111 0001
Char	**Name**	**Decimal**	**Hex**	**Binary**
r	lowercase r	114	72	0111 0010
s	lowercase s	115	73	0111 0011

t	lowercase t	116	74	0111 0100
u	lowercase u	117	75	0111 0101
v	lowercase v	118	76	0111 0110
w	lowercase w	119	77	0111 0111
x	lowercase x	120	78	0111 1000
y	lowercase y	121	79	0111 1001
z	lowercase z	122	7A	0111 1010
{	open brace	123	7B	0111 1011
|	vertical line	124	7C	0111 1100
}	close brace	125	7D	0111 1101
~	tilde	126	7E	0111 1110
Delete	DEL	127	7F	0111 1111
™	Trademark	153	99	1001 1001
©	Copyright	169	A9	1010 1001
®	Registered	174	AE	1010 1110
º	Degree	176	B0	1011 0000

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